

Community & Economic
Development Department
adcogov.org



4430 South Adams County Parkway
1st Floor, Suite W2000B
Brighton, CO 80601-8218
PHONE 720.523.6800
EMAIL epermitcenter@adcogov.org

Request for Comments

Case Name: Wakeman Pad at Powhaton
Case Number: OGF2024-00001

January 8, 2024

The Adams County Community & Economic Development Department is requesting comments on the following application: **Oil and Gas Facility (OGF) Permit to allow 16 wells on 7.8 acres in the Agricultural-3 zone district including the Airport Noise and Airport Height Overlay Districts.** This request is located at 13721 Powhaton Rd. The Assessor's Parcel Number is 0156720400003. The applicant is Providence Energy d.b.a POCO Operating / Upstream Petroleum Management, Andrea Gross, 6494 S. Quebec St., Englewood, CO 80111.

Please forward any written comments on this application to the Community and Economic Development Department at 4430 South Adams County Parkway, Suite W2000A Brighton, CO 80601-8216 or call (720) 523-6800 by 02/05/2024 in order that your comments may be taken into consideration in the review of this case. If you would like your comments included verbatim please send your response by way of e-mail to GDean@adcogov.org.

Once comments have been received and the staff report written, the staff report and notice of public hearing dates may be forwarded to you upon request. The full text of the proposed request and additional colored maps can be obtained by contacting this office or by accessing the Adams County web site at www.adcogov.org/current-land-use-cases.

Thank you for your review of this case.

Gregory Dean
Oil & Gas Administrator

BOARD OF COUNTY COMMISSIONERS

Eva J. Henry
DISTRICT 1

Charles "Chaz" Tedesco
DISTRICT 2

Emma Pinter
DISTRICT 3

Steve O'Dorisio
DISTRICT 4

Lynn Baca
DISTRICT 5

Providence Operating LLC DBA POCO Operating
Wakeman Wellpad
Section 20, Township 1 South Range 65 West (SW/4 SE/4) Adams
County, Colorado
Surface: Fee, Mineral Lease: Fee

Written Explanation

The proposed project consists of the construction of one (1) wellpad with up to sixteen (16) wells and one (1) access road for an oil and gas location to be operated by Providence Operating LLC DBA POCO Operating (POCO Operating) POCO Operating does not intend to drill all 16 wells consecutively. The drilling schedule is subject to change due to economic conditions, business development priorities and equipment availability.

Sequence of Major Activities and Estimated Completion Date

Access Road and Wellpad:

Phase I-Pre-Drilling (14 - 21 days)

The existing access road will be upgraded and graveled to crown/ditch standards. Ripping and dozing will be done on the contour to prevent erosion while improving the road. There will be minimal traffic to the location during construction. Pad construction will be done simultaneously with road construction. The drilling rig will be moved onto the pad over the bladed road and drilling will begin. The private surface owner or good engineering practices (i.e. if a culvert is needed for drainage to prevent washout) will stipulate whether culverts will be installed at this point. A silt fence and/or ditch with catch ponds, and/or straw bales/waddles will surround the wellpad area during the drilling operations to prevent erosion. Site conditions may dictate alternate erosion control measures which will be chosen appropriately for current on-the-ground conditions. The access road will be graveled concurrently with wellpad completion.

Phase II-Drilling and Completion (Drilling: 7 – 12 days per well, Completion: 5 – 10 days per well)

After the drilling rig is moved out a truck mounted service rig will be moved in for well completion activities. Any additional operations including well stimulation will be performed at this point.

Final drainage design as designated or approved by the private surface owner will be implemented. Culverts, low water crossings, equipment installation, etc., will be done during this phase.

Phase III-Production

Well completion activities will be finished by this point and the well may be put online. Phase III can extend upwards of 40 years. There will be minimal vehicle traffic; 1-2 light trucks per day may travel the road to check well and maintenance. Depending on liquid production, a tanker truck may come to the site once every 1-30 days. Periodic downhole maintenance and repair will be done on an as needed basis.

Wellpad:

The proposed wellsite is anticipated to be 7.8 acres. Wellpad construction will commence approximately two (2) to five (5) weeks prior to the commencement of drilling operations. The size of location will have an interim reclamation size of 5.79 acres during the production phase.

Production facilities may vary according to the actual reservoir discovered and will be engineered upon completion of well tests. Production facilities will be clustered and placed away from cut/fill slopes to allow maximum recontouring of cut/fill slopes.

SITE EQUIPMENT LIST

Indicate the number and type of major equipment components planned for use on this Oil and Gas Location:

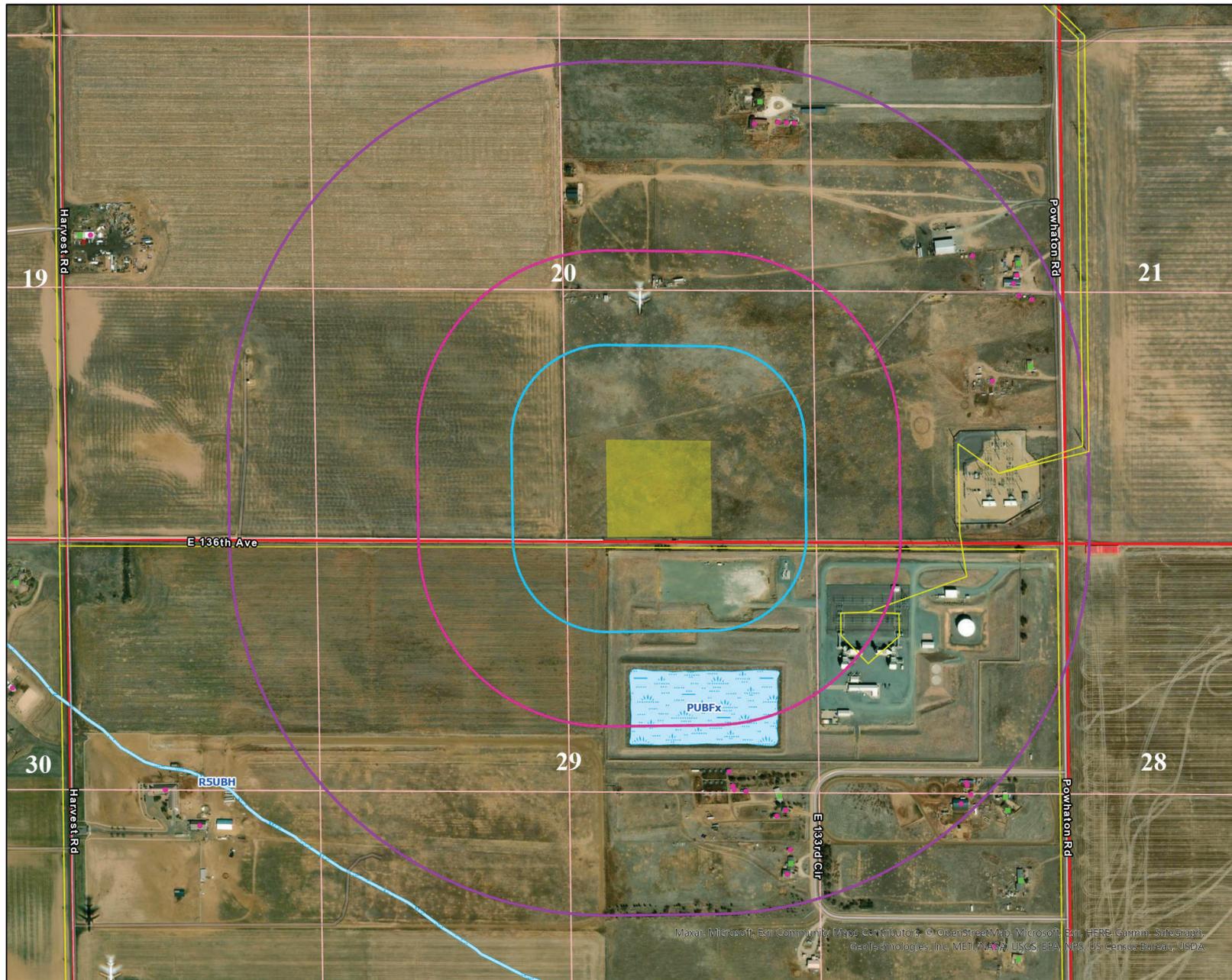
Wells	16	Oil Tanks	2	Condensate Tanks	0	Water Tanks	2	Buried Produced Water Vaults	0
Drilling Pits	0	Production Pits	0	Special Purpose Pits	0	Multi-Well Pits	0	Modular Large Volume Tank	2
Pump Jacks	0	Separators	3	Injection Pumps	0	Heater-Treaters	1	Gas Compressors	1
Gas or Diesel Motors	0	Electric Motors	1	Electric Generators	0	Fuel Tanks	0	LACT Unit	1
Dehydrator Units	0	Vapor Recovery Unit	2	VOC Combustor	3	Flare	0	Enclosed Combustion Devices	0
Meter/Sales Building	0	Pigging Station	0			Vapor Recovery Towers	0		

OTHER PERMANENT EQUIPMENT

Permanent Equipment Type	Number
Electrical Switch Rack	1
Water Truck Out	1
Fuel Gas Accumulator	1
Oil Truck Out	1
Surge Vessel	1
Rio Panel	1
Combuster Knockout	1
Transformer	1
67 Gallon Sump Box	1
Instrument Air	1
Riser Area	1
Recirculating Pump	1
Sales Gas Metering	1
Fuel Gas Scrubber	2

OTHER TEMPORARY EQUIPMENT

Temporary Equipment Type	Number
Closed Flowback Tank	3
4 Phase flowback Separator	1
Liquid & Solids Separator	1
Combuster	1
3 sided Open Top Bin	1



Legend

- Proposed Location
- 2,000 Foot Buffer
- 1,000 Foot Buffer
- 500 Foot Buffer
- Roads
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	South 1,249'
Residential Building Unit	South 1,421'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (E 136th Ave)	SW 28'
Above Ground Utility	South 58'
Railroad	NW > 5,280'
Property Line	South 23'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	South 711'
Surface Water	South 711'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	0	0	5
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.

N
0 0.1 0.2 Miles



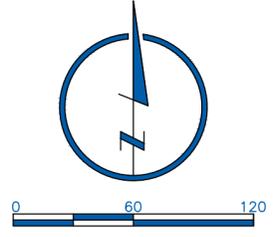
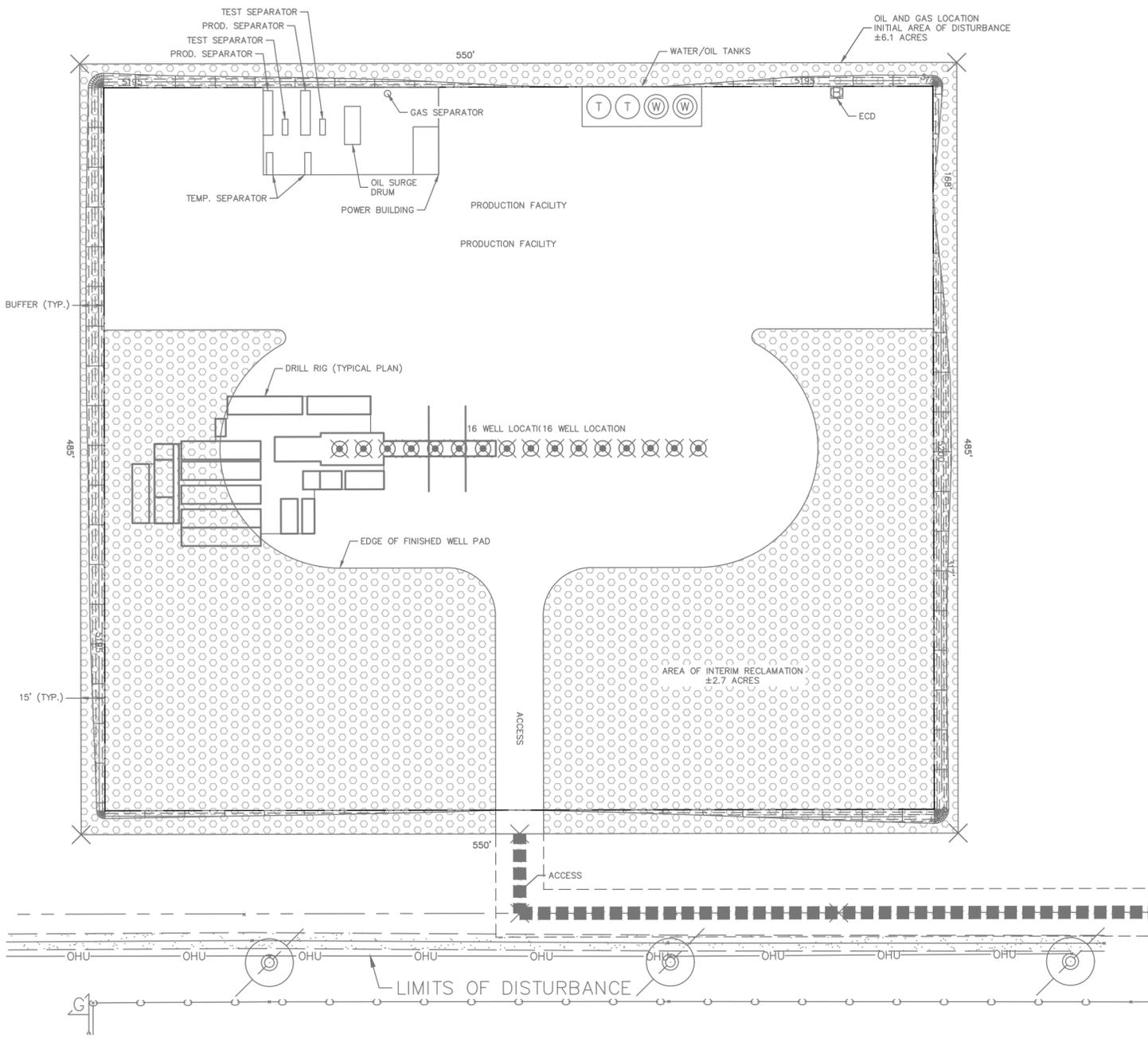
WAKEMAN PAD
SW 1/4 SE 1/4, SECTION 20, T1S R65W
ADAMS COUNTY, CO

**ALTERNATIVE LOCATION ANALYSIS RULE 304.b
PROPOSED LOCATION: MAP 4 of 7**

Prepared by: REDHAWK GIS

Maxar, Microsoft, Esri, Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, Swisstopo, GeoTechnologies, Inc, METI, NASA, USGS, EPA, NPS, US Census Bureau, USDA

L:\Engineering\0218023.04 PS - Wakeman 20-17\DRAWINGS\CONSTRUCTION DRAWINGS\0218023.04 LS-01.dwg, 6/22/2018 8:43:51 AM, SAM CHRISTENSEN, LAMP RYNEARSON & ASSOCIATES



NATIVE GRASS SEED MIX:

CODE	BOTANICAL NAME	COMMON NAME	% OF MIX (PLS LBS)
	PASCOPYRUM SMITHII	WESTERN WHEATGRASS	30%
	ACHANTHERUM HYMENOIDES	INDIAN RICEGRASS	30%
	ELYMUS TRACHYCAUIUS	SLENDER WHEATGRASS	20%
	SPOROBOLUS CRYPTANRUS	SAND DROPSEED	20%

SEED MIX NOTES

- SEED SHALL BE FURNISHED IN BAGS OR CONTAINERS CLEARLY LABELED TO SHOW THE NAME AND ADDRESS OF THE SUPPLIER, THE SEED NAME, THE LOT NUMBER, NET WEIGHT, THE PERCENT OF WEED SEED CONTENT AND THE GUARANTEED PERCENTAGE OF PURITY AND GERMINATION.
- THE CONTRACTOR SHALL SUBMIT TO THE PROJECT REPRESENTATIVE A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED WITHIN SIX MONTHS PRIOR TO THE DATE OF DELIVERY. SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE.
- SEED AND SEED LABELS SHALL CONFORM TO ALL CURRENT STATE AND FEDERAL REGULATIONS AND WILL BE SUBJECT TO THE TESTING PROVISIONS OF THE ASSOCIATION OF OFFICIAL SEE ANALYSIS.
- COMPUTATIONS FOR QUANTITY OF SEED REQUIRED ARE BASED ON THE PERCENT OF PURITY AND PERCENT OF GERMINATION: POUNDS OF SEED X PURITY X GERMINATION = POUNDS OF PURE LIVE SEED (PLS).
- SITE PREPARATION FOR BAREGROUND SEEDING:
 - CONDUCT A SOIL TEST, PER ACRE, TO DETERMINE ANY NEEDED SOIL AMENDMENTS. IDEAL SOIL PH IS BETWEEN 6.0 AND 7.0.
 - REMOVE ALL EXISTING VEGETATION, SPRAY SEED AREA WITH NON-SELECTIVE HERBICIDE, REMOVE DEAD VEGETATION AND LARGE DEBRIS.
 - ADD SOIL AMENDMENTS AS NECESSARY TO ADJUST SOIL PH LEVELS AND TILL SOIL TO A 4" - 6" DEPTH. PULVERIZE AND LIGHTLY ROLL SOIL.
 - APPLY 1 LB OF PHOSPHOROUS(P) (2.27 LBS P205)/1000 SQ.FT. TO SOIL SURFACE.
- SEEDING METHODS, BASED ON THE SLOPE AND SOIL AT SITE. USE BROADCAST, DROP, SLIT OR DRILL SEEDING METHODS WHERE EROSION IS NOT A CONCERN.
 - DRILL SEEDING = 25LBS PER ACRE AND BROADCAST SEEDING = 37.5 LBS PER ACRE
 - SEED SHOULD BE PLANTED .125 TO .25 INCHES BELOW SOIL SURFACE, IN TWO DIRECTIONS PUTTING 1/2 OF THE SEED DOWN EACH DIRECTION. SEEDED AREAS SHOULD BE GENTLY ROLLED OR RAKED TO ENSURE GOOD SOIL TO SEED CONTACT.
- WATERING REQUIREMENTS:
 - WATER TO FIELD CAPACITY IMMEDIATELY AFTER SEEDING.
 - WEEK 1 - 3 AFTER SEEDING SOIL SHALL BE MOIST TO 1 INCH DEPTH.
 - WEEKS 4-6 AFTER SEEDING AREA SHALL BE WATERED 3-4 TIMES PER WEEK.
 - AFTER 6 WEEKS GRASS SHALL ONLY NEED WATER WHEN IT BEGINS TO SHOW DROUGHT STRESS.
- FERTILIZE SEEDED AREA ONCE FOR THE FIRST TWO MONTHS WITH .5 LBS OF N/1000 SQ.FT. AFTER SEEDING.
- MOW WHEN THE GRASS IS ONE INCH LONGER THAN DESIRED HEIGHT. DO NOT REMOVE MORE THAN 1/3 OR GRASS BLADE.

DRAWN BY	SJC
DESIGNED BY	SJC
DATE	6-22-2018
JOB NUMBER-TASKS	0218023.04
BOOK AND PAGE	

REVISIONS	###	###	###	###	###
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LAMP RYNEARSON & ASSOCIATES
 14710 West Dodge Road, Suite 100 | 402.496.2498 | P
 Omaha, Nebraska 68154-2027 | 402.496.2730 | F
 www.LRA-inc.com

WAKEMAN 20-17 PAD
COUNTY OF ADAMS, CO

LANDSCAPE PLAN

###
###

811
 Know what's below.
 Call before you dig.

ALL UTILITIES ARE SHOWN BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.



Oil and Gas Facility Permit (OGF) - Application Checklist

Application submittals must include all documents on this checklist. Please use the reference guide included in this packet for more information on each submittal item.

All applications shall be submitted electronically to epermitcenter@adcogov.org. If a submittal is too larger to email as an attachment, the application may be sent as an unlocked OneDrive link. Alternatively, the application may be delivered on a flash drive to the One-Stop Customer Service Center. Once a complete application has been received, fees will be invoiced and payable online at: <https://permits.adcogov.org/CitizenAccess/>.

1. Conceptual Review Summary and Alternative Site Analysis N/A - not being requested by Greg Dean
2. Neighborhood meeting summary
3. Development Application
 - Operations Plan
 - Emergency Preparedness and Response Plan
 - Transportation Plan
 - Noise Mitigation Plan
 - Lighting Mitigation Plan
 - Odor Mitigation Plan
 - Dust Mitigation Plan
 - Visual Aesthetics Plan
 - Community Outreach Plan



Cumulative Impacts Plan

Water and Wildlife Protection Plan

Engineering Documents

Surface Owner Documentation

Other Documentation as determined by the Director of Community and
Economic Development Department

Signed Oil and Gas Worker Safety Compliance Statement

4. Application fees (see table below)

Application Fees	Amount	Due
Oil and Gas Facility Permit	\$2,600	After complete application
Tri-County Health	\$245	After complete application

Adams County Administrative Use by
Special Review (AUSR)

Neighborhood Meeting Summary



POCO Operating held a neighborhood meeting on October 26, 2022 as part of the Adams County permitting process. All parcel owners within 1 mile of the property line on which the proposed location will be permitted on, were invited to the informational neighborhood meeting. The meeting was held as an open house, with posters set up according to phases of operations. POCO Representatives, in charge of regulatory, land and operations were present to speak to each phase of operations and answer any questions. Three (3) people from 2 separate households attended the meeting as well as Greg Dean, Adams County Local Government Designee.

The majority of the comments received were regarding noise, royalty payments and anticipated road improvements. The conversations were very productive and informative.

Contact information was available to all attendees in order to continue communication with the operator.

Providence Operating LLC DBA POCO Operating
Wakeman Wellpad
Section 20, Township 1 South Range 65 West (SW/4 SE/4) Adams
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OIL AND GAS OPERATIONS PLAN - ADMINISTRATIVE USE BY SPECIAL REVIEW

WAKEMAN 20-17 PAD
POCO OPERATING

Located in Part of the SE1/4 of S.20, T.1S., R.65W. of the 6th P.M.,
County of Adams, State of Colorado

COGCC Location ID 461092

PROPERTY INFORMATION

OWNER: WAKEMAN KATHERINE L.
PROPERTY ADDRESS: 13721 POWHATON ROAD
ADAMS COUNTY PARCEL NO.: D15872040003
LAND USE: AG
ZONING: A-3

COUNTY ASSESSORS LEGAL:

SECT. TWP. R. 16G: 20-1-85 DESC: PARCEL 4 PT OF THE SE4 OF SEC 20 DESC AS FOLS BEG AT THE SE COR OF SD SEC 20 TH N 1145/13 FT TH S 780 02M W 2698/60 FT TH S 530/73 FT TH S 88D 48M E 2840/88 FT TO THE POB EXC PARC 43/261A

CONTACTS

APPLICANT

Upstream Petroleum Management
6494 Quebec St
Englewood, CO 80111
Andrea Gross - 720-339-4277

OPERATOR

POCO Operating
9635 Maroon Cr., Suite 450
Englewood, CO 80112
Meghan Grimes - 720-256-8774

PROPERTY OWNERS

WAKEMAN KATHERINE L.
13721 POWHATON ROAD
BRIGHTON, CO 80603

ADAMS COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT

KRISTIN SULLMAN
4430 S. ADAMS COUNTY PARKWAY
1ST FLOOR, SUITE W2000
BRIGHTON, CO 80601
(720) 953-8800

ADAMS COUNTY SHERIFFS DEPARTMENT

MICHAEL MCINTOSH
ADAMS COUNTY SHERIFF
(303) 854-1850 OR 911

FIRE DISTRICT 6 GREATER BRIGHTON

MARK BOGANE
FIRE CHIEF
(303) 859-4101 OR 911

COLORADO OIL & GAS CONSERVATION COMMISSION

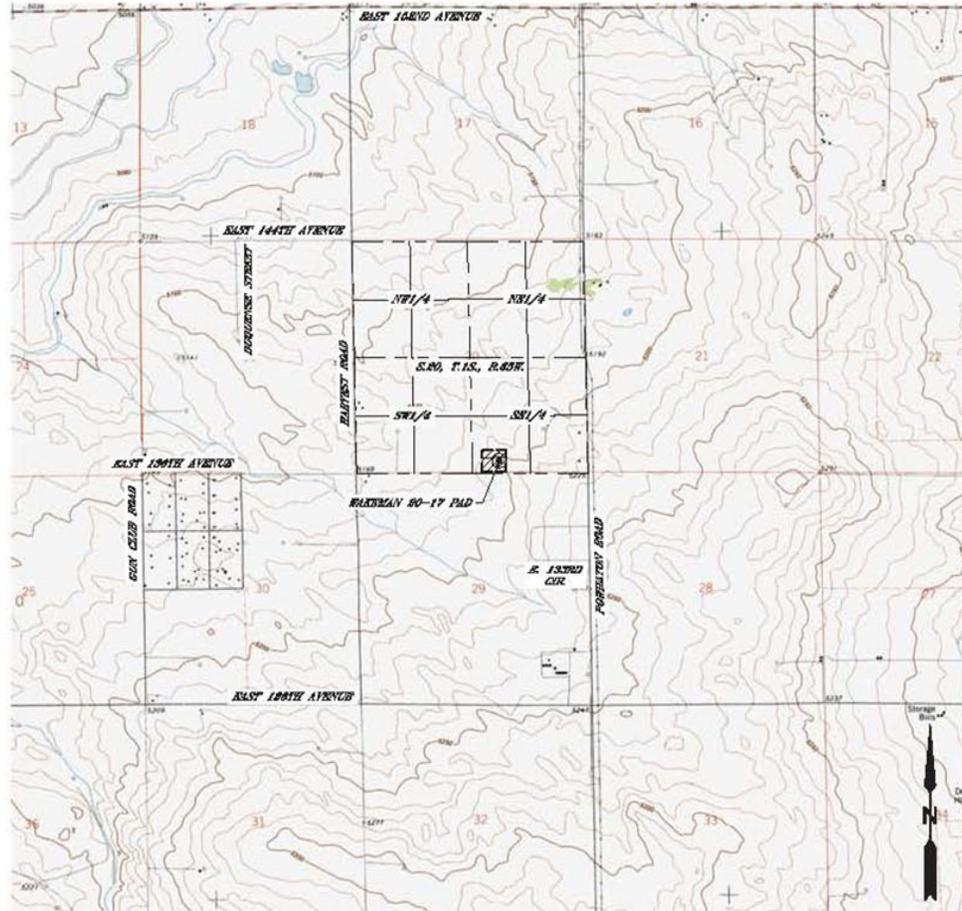
(303) 894-2100

LAND SURVEYOR

JASON S. ALLEE
LAT40, INC.
6250 W. 10TH STREET
GREELEY, CO 80634
(970) 915-5294

NOTES

- PUBLIC IMPROVEMENTS SHALL CONFORM TO ADAMS COUNTY STANDARDS AND SPECIFICATIONS AND LATEST EDITION OF COLORADO DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS.
- HORIZONTAL AND VERTICAL CONTROL:
NBS POWHATON
FOUND 3" BRASS CAP, SET IN 1/2" DIA. CONCRETE COLUMN,
SET FLUSH WITH GROUND.
LAT: 39°24'51.42554" (N)
LONG: 104°40'58.43108" (W)
EL: 5339.92 FEET (NAVD 88)
PID: AB3300
- THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.



VICINITY MAP
SCALE - 1" = 2000'

LEGEND

- SECTION LINE
- - - SECTION LINE FRACTIONAL
- - - EXISTING CONTOUR
- - - 4700 EXISTING CONTOUR INDEX
- - - 4700 PROPOSED CONTOUR
- - - 4700 PROPOSED CONTOUR INDEX
- OVER-HEAD UTILITY
- FENCE
- CHAIN LINK FENCE
- DITCH
- CONCRETE
- ASPHALT
- GRAVEL/DIRT DRIVEWAY
- BUILDING
- NBS
- NBS BENCHMARK
- FIBER OPTIC MARKER
- FIBER OPTIC VAULT
- ELECTRIC PEDESTAL
- GAS MARKER
- ELECTRIC MANHOLE
- ELECTRIC VAULT
- POWER POLE
- ELECTRIC SERVICE
- GUY WIRE
- WATER WELL (PER CDWR GIS)
- WATER WELL (SURVEYED LOCATION)
- PROPOSED WELL HEAD
- EXISTING PRODUCING WELL HEAD
- PLUGGED & ABANDONED WELL (PER COGCC GIS)

SHEET INDEX

- SHEET 1 - COVER SHEET
- SHEET 2 - IMPACT AREA MAP
- SHEET 3 - IMPACT AREA MAP DETAIL
- SHEET 4 - DRILLING OPERATION PLAN
- SHEET 5 - PRODUCTION PLAN

SHEET SIZE: 16" X 24"



LAT40, Inc.
Professional Land Surveyors
6250 W. 10th Street, Unit 2
Greeley, CO 80634
O: 970-515-5294

DATE: 2/26/2018	FILE NAME: 2017113USR.dwg	DRAWN BY: LVD	CHECKED BY: JSA	SCALE: AS SHOWN	PROJECT #: 2017113
REVISIONS:		DATE:	COVER SHEET		
					1
					SHEET 1 OF 5

OIL AND GAS OPERATIONS PLAN - ADMINISTRATIVE USE BY SPECIAL REVIEW

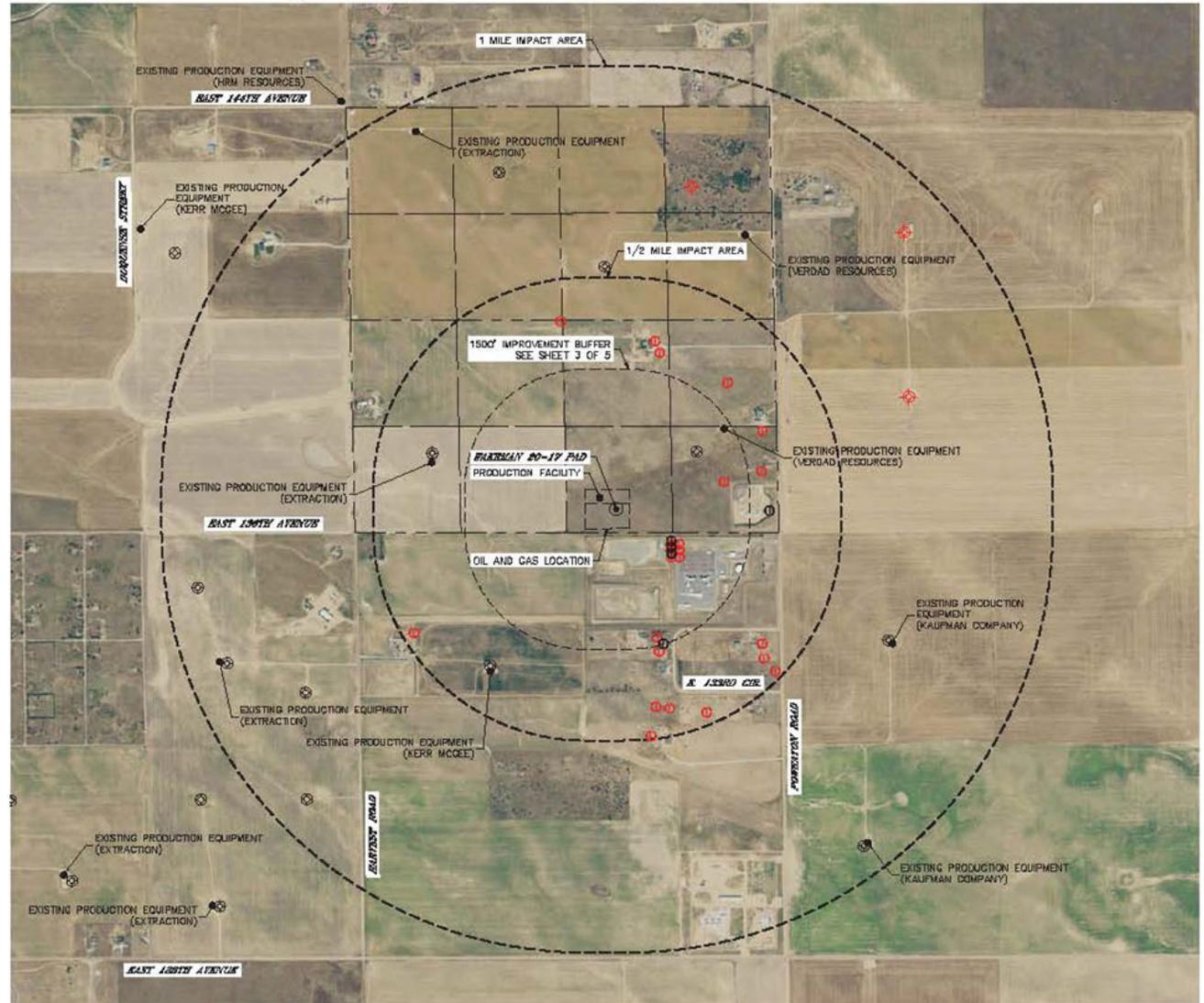
WAKEMAN 20-17 PAD
POCO OPERATING

COGCC Location ID 461092

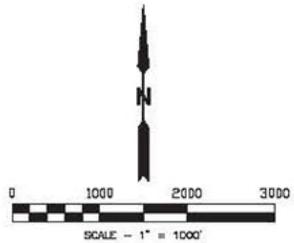
Located in Part of the SE1/4 of S.20, T.1S., R.65W. of the 6th P.M.,
County of Adams, State of Colorado

LEGEND

- SECTION LINE
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- EXISTING CONTOUR
- - - - - EXISTING CONTOUR INDEX
- - - - - 4700
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- FIBER OPTIC MARKER
- FIBER OPTIC VAULT
- ELECTRIC PEDESTAL
- GAS MARKER
- ELECTRIC MANHOLE
- ELECTRIC VAULT
- POWER POLE
- ELECTRIC SERVICE
- GUY WIRE
- WATER WELL (PER ODMR DIS)
- WATER WELL (SURVEYED LOCATION)
- PROPOSED WELL HEAD
- EXISTING PRODUCING WELL HEAD
- PLUGGED & ABANDONED WELL (PER COGCC DIS)



SHEET SIZE: 18" X 24"



Lat40, Inc.
Professional Land Surveyors
6250 W. 10th Street, Unit 2
Greeley, CO 80634
O: 970-515-5294

DATE: 2/28/2018	FILE NAME: 2017113USR.dwg	DRAWN BY: LVD	CHECKED BY: JSA	SCALE: AS SHOWN	PROJECT #: 2017113
REVISIONS:		DATE:	IMPACT AREA MAP		
2					SHEET 2 OF 5

OIL AND GAS OPERATIONS PLAN - ADMINISTRATIVE USE BY SPECIAL REVIEW

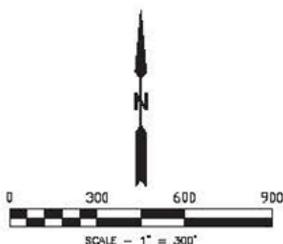
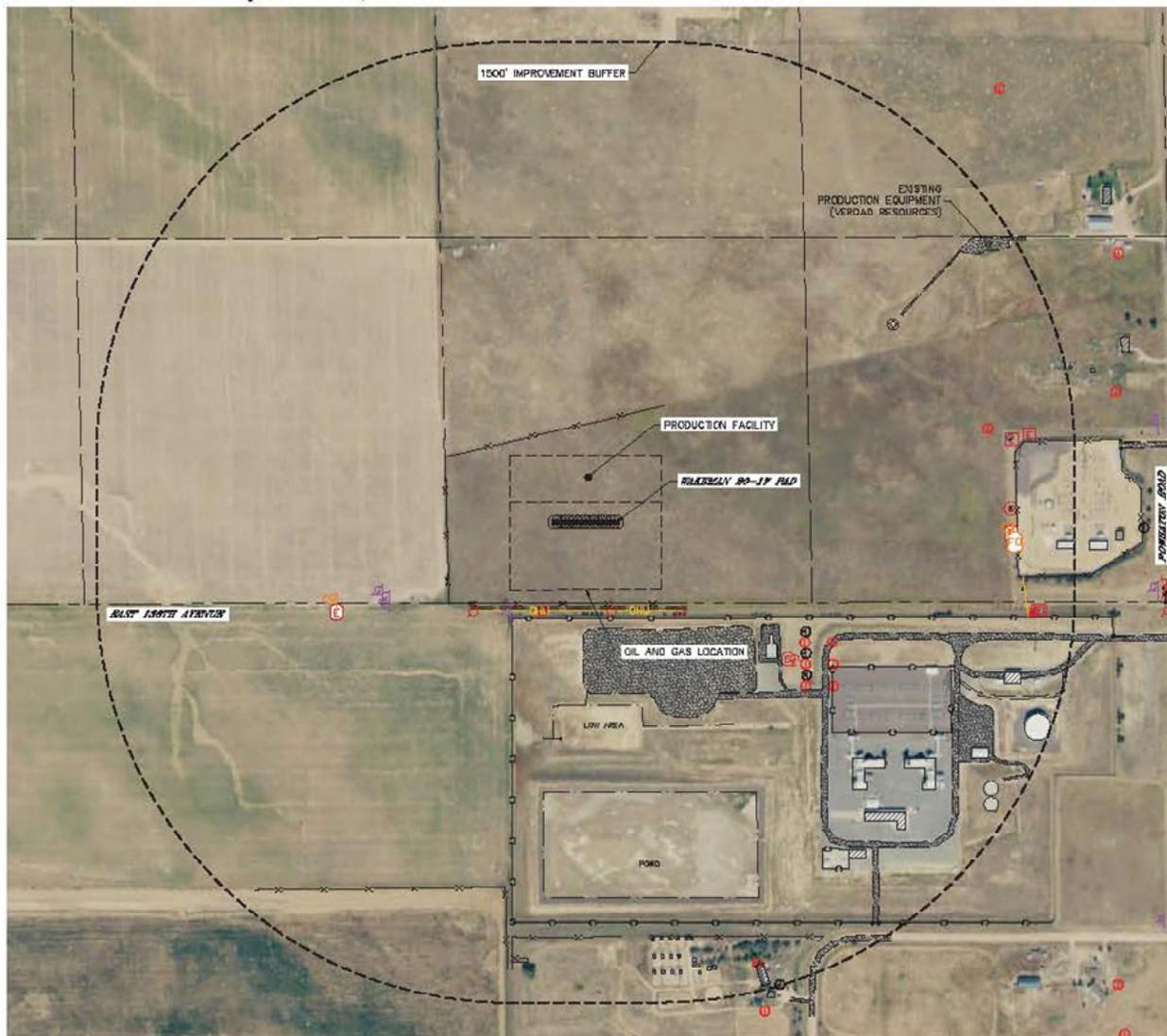
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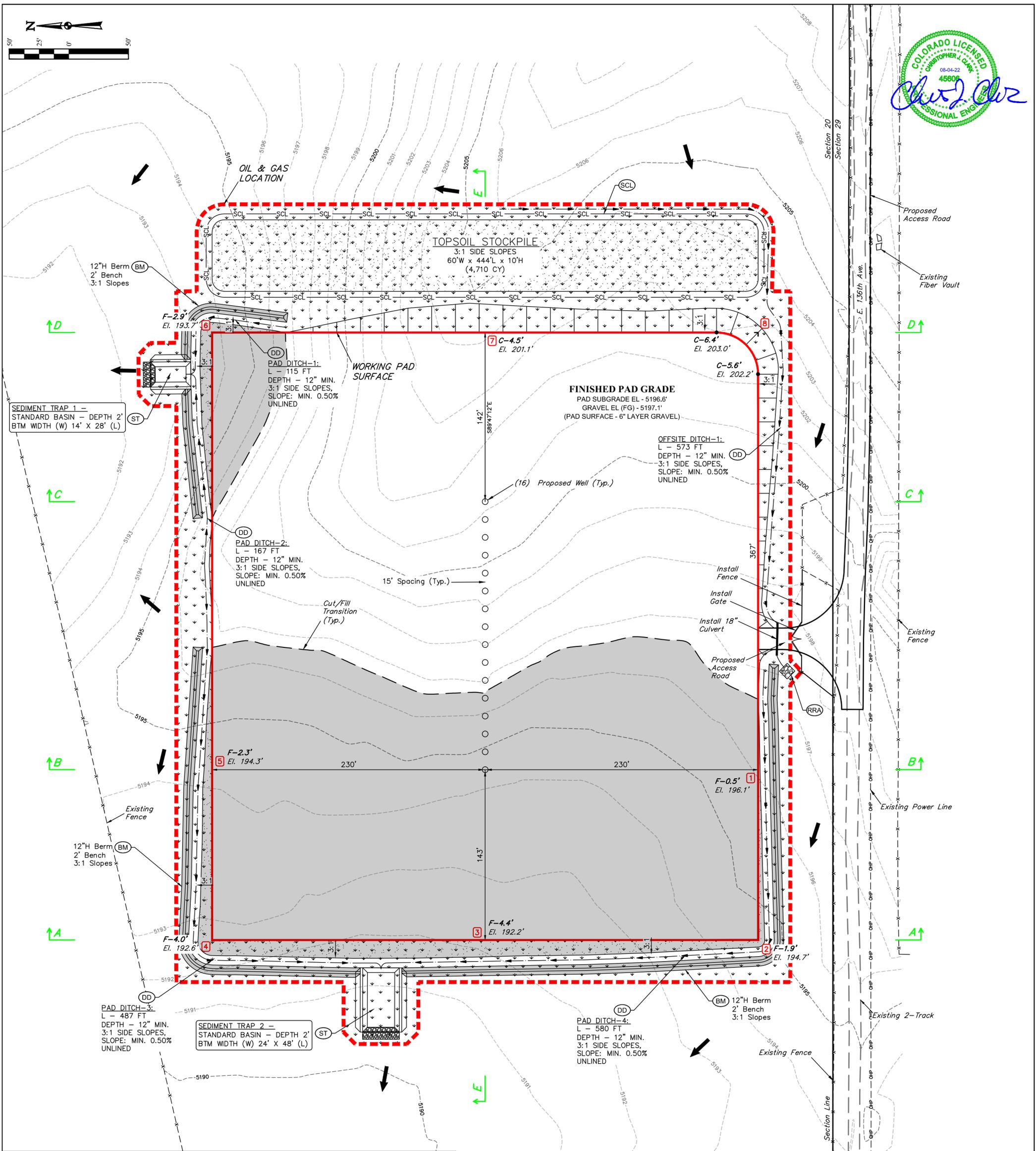
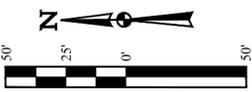
- SECTION LINE
- SECTION LINE FRACTIONAL
- - - EXISTING CONTOUR
- - - 4700' EXISTING CONTOUR INDEX
- - - PROPOSED CONTOUR
- - - 4700' PROPOSED CONTOUR INDEX
- OIL OVERHEAD UTILITY
- - - FENCE
- - - CHAIN LINK FENCE
- - - DITCH
- CONCRETE
- ASPHALT
- GRAVEL/DIRT DRIVEWAY
- BUILDING
- NCS NCS BENCHMARK
- FIBER OPTIC MARKER
- FIBER OPTIC VAULT
- ELECTRIC PEDESTAL
- GAS MARKER
- ELECTRIC MANHOLE
- ELECTRIC VAULT
- POWER POLE
- ELECTRIC SERVICE
- GUY WIRE
- WATER WELL (PER COVNR GIS)
- WATER WELL (SURVEYED LOCATION)
- PROPOSED WELL HEAD
- EXISTING PRODUCING WELL HEAD
- PLUGGED & ABANDONED WELL (PER COGCC GIS)



Lat40, Inc.
Professional Land Surveyors
6250 W. 10th Street, Unit 2
Greeley, CO 80634
O: 970-515-5294

DATE: 2/28/2018	FILE NAME: 2017113USR.dwg	DRAWN BY: LVD	CHECKED BY: JSA	SCALE: AS SHOWN	PROJECT #: 2017113
REVISIONS:		DATE:	IMPACT AREA MAP DETAIL FOR PETROSHARE CORP 9635 MAROON CIRCLE, SUITE 400 ENGLEWOOD, COLORADO 80112		
3 SHEET 3 OF 5					

SHEET SIZE: 18" X 24"



LEGEND

	WELL PAD CORNER STAKE		SEEDING AND MULCHING
	DESIGN "C" CUT OR "F" FILL AT CORNER STAKE		BERM
	EXISTING GROUND ELEV. AT CORNER STAKE (TRUNCATED LESS 5,000 FEET)		EXISTING FENCE
	DIVERSION DITCH		EXISTING POWER LINE
	OUTLET PROTECTION		EXISTING MAJOR CONTOUR
	SEDIMENT TRAP		EXISTING MINOR CONTOUR
	SEDIMENT CONTROL LOG		PROPOSED MAJOR CONTOUR
	RIP RAP APRON		PROPOSED MINOR CONTOUR
			WORKING PAD SURFACE
			OIL & GAS LOCATION

WORKING PAD SURFACE DISTURBANCE = 5.380 ACRES
 DISTURBANCE DURING CONSTRUCTION = 2.427 ACRES

- NOTES:**
- Rounded corners shown at 35' radius.
 - Construct diversion ditches as needed.
 - Contours shown at 1' intervals.
 - Cut/Fill slopes 3:1 (Typ.).
 - Overall working pad surface = 510' x 460'

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 Vernal, UT 84078 * (435) 789-1017

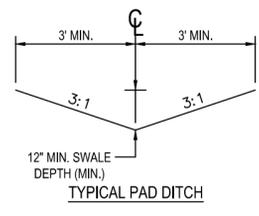
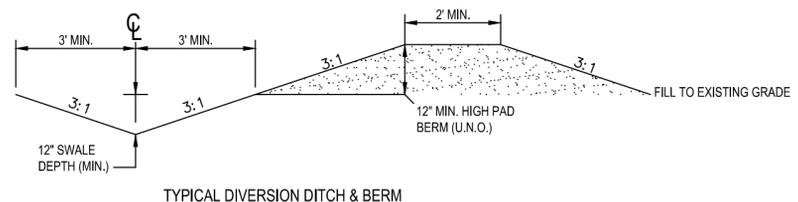
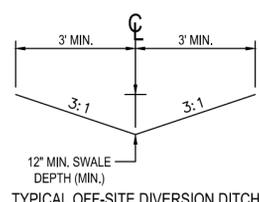
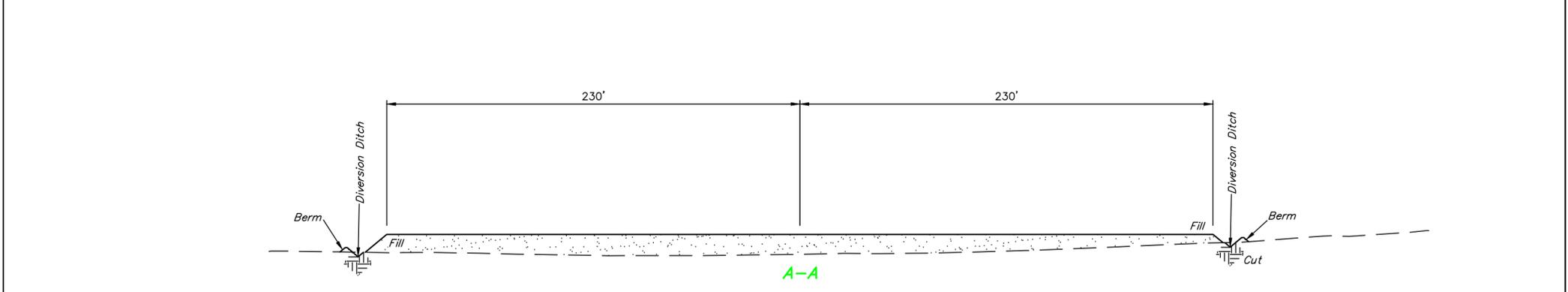
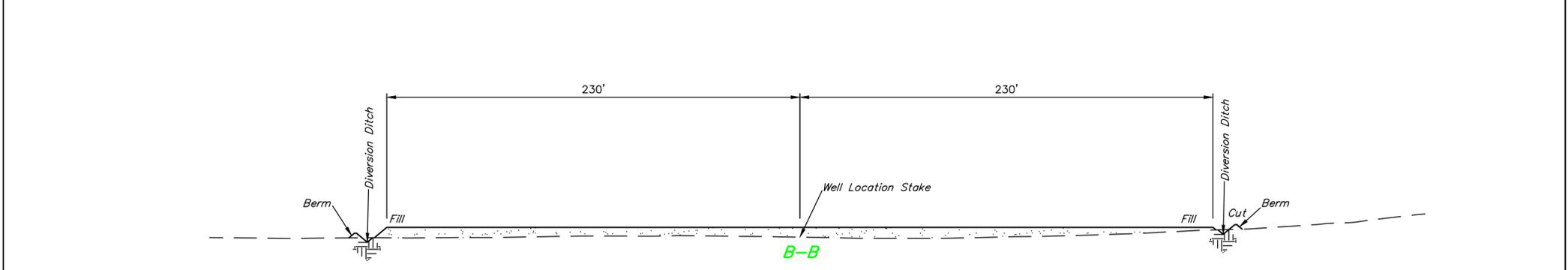
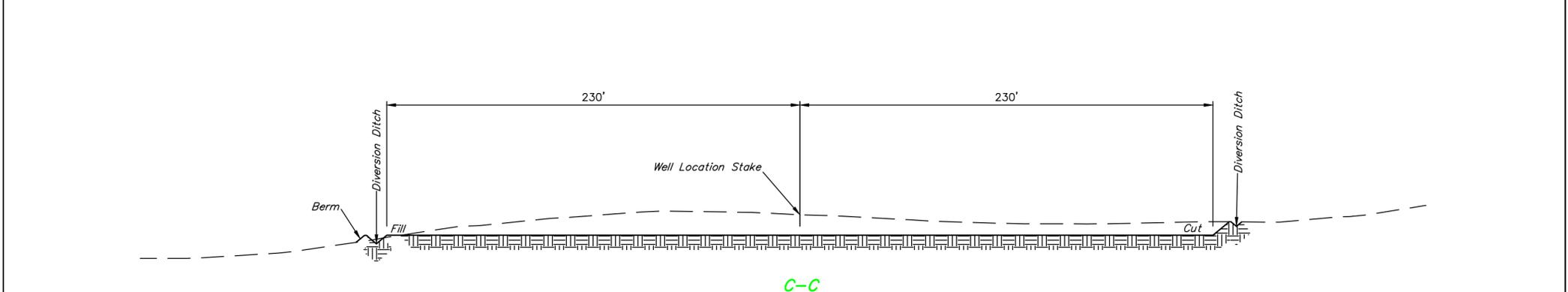
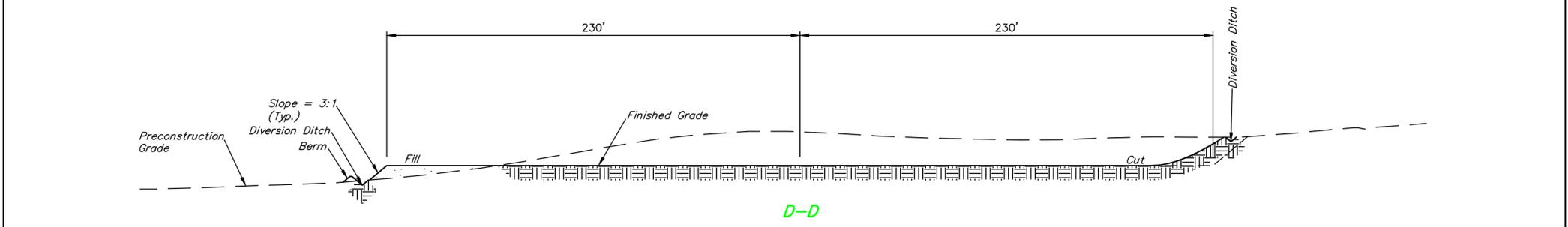
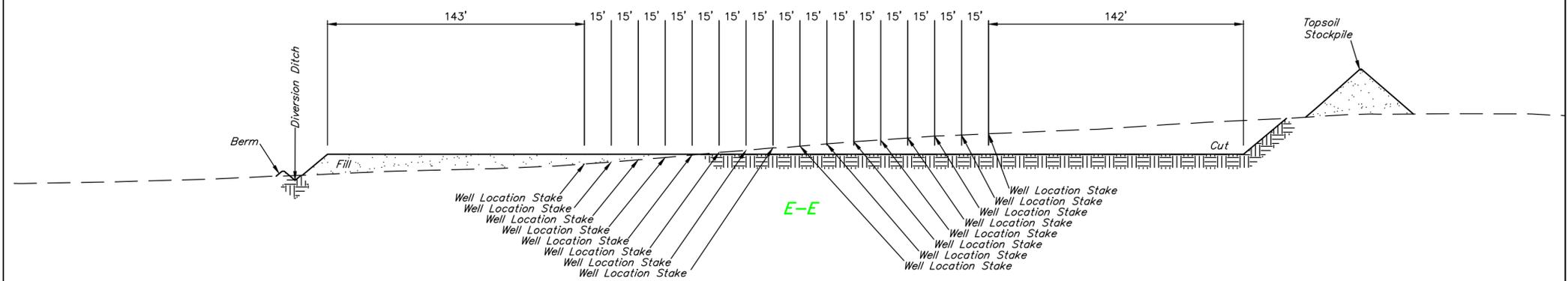
POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

CONSTRUCTION LAYOUT - PLAN VIEW

1" = 20'
X-Section Scale
1" = 50'

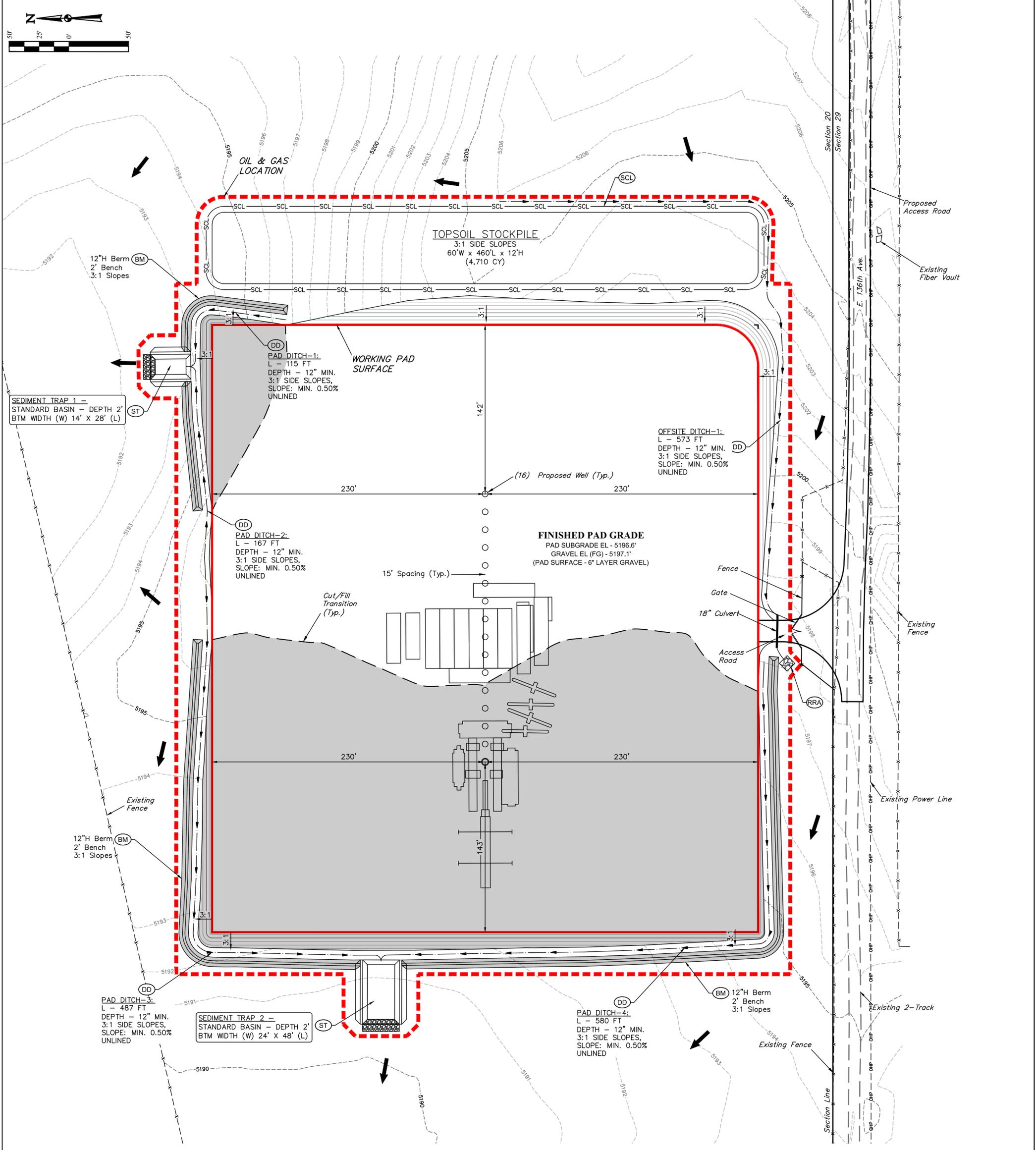


APPROXIMATE EARTHWORK QUANTITIES	
(6") TOPSOIL STRIPPING	4,710 Cu. Yds.
REMAINING LOCATION	12,860 Cu. Yds.
TOTAL CUT	17,570 Cu. Yds.
FILL	12,860 Cu. Yds.
EXCESS MATERIAL	4,710 Cu. Yds.
TOPSOIL	4,710 Cu. Yds.
GRAVEL BASE ON PAD (6")	4,340 Cu. Yds.
DEFICIT UNBALANCE (After Interim Rehabilitation)	<4,340 Cu. Yds.>

APPROXIMATE SURFACE DISTURBANCE AREAS	
WORKING PAD SURFACE DISTURBANCE	±5.380 ACRES
CONSTRUCTION DISTURBANCE	±2.427
TOTAL OIL & GAS LOCATION	±7.807

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
TOTAL OIL & GAS LOCATION (LOD)	NA	±7.807
30' WIDE 2-TRACK UPGRADE DISTURBANCE	±2,185'	±1.505
30' WIDE ACCESS ROAD DISTURBANCE (NEW CONSTRUCTION)	±80'	±0.055
TOTAL SURFACE USE AREA		±9.367

NOTES:
 • Fill quantity includes 5% for compaction.
 • Calculations based on 6" of topsoil stripping.
 • Cut/Fill slopes 3:1 (Typ.).



SEDIMENT TRAP 1 -
STANDARD BASIN - DEPTH 2'
BTM WIDTH (W) 14' X 28' (L)

PAD DITCH-1:
L - 115 FT
DEPTH - 12" MIN.
3:1 SIDE SLOPES,
SLOPE: MIN. 0.50%
UNLINED

PAD DITCH-2:
L - 167 FT
DEPTH - 12" MIN.
3:1 SIDE SLOPES,
SLOPE: MIN. 0.50%
UNLINED

PAD DITCH-3:
L - 487 FT
DEPTH - 12" MIN.
3:1 SIDE SLOPES,
SLOPE: MIN. 0.50%
UNLINED

SEDIMENT TRAP 2 -
STANDARD BASIN - DEPTH 2'
BTM WIDTH (W) 24' X 48' (L)

PAD DITCH-4:
L - 580 FT
DEPTH - 12" MIN.
3:1 SIDE SLOPES,
SLOPE: MIN. 0.50%
UNLINED

TOPSOIL STOCKPILE
3:1 SIDE SLOPES
60'W x 460'L x 12'H
(4,710 CY)

FINISHED PAD GRADE
PAD SUBGRADE EL - 5196.6'
GRAVEL EL (FG) - 5197.1'
(PAD SURFACE - 6" LAYER GRAVEL)

LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:
• Contours shown at 1' intervals.
• Overall working pad surface = 510' x 460'

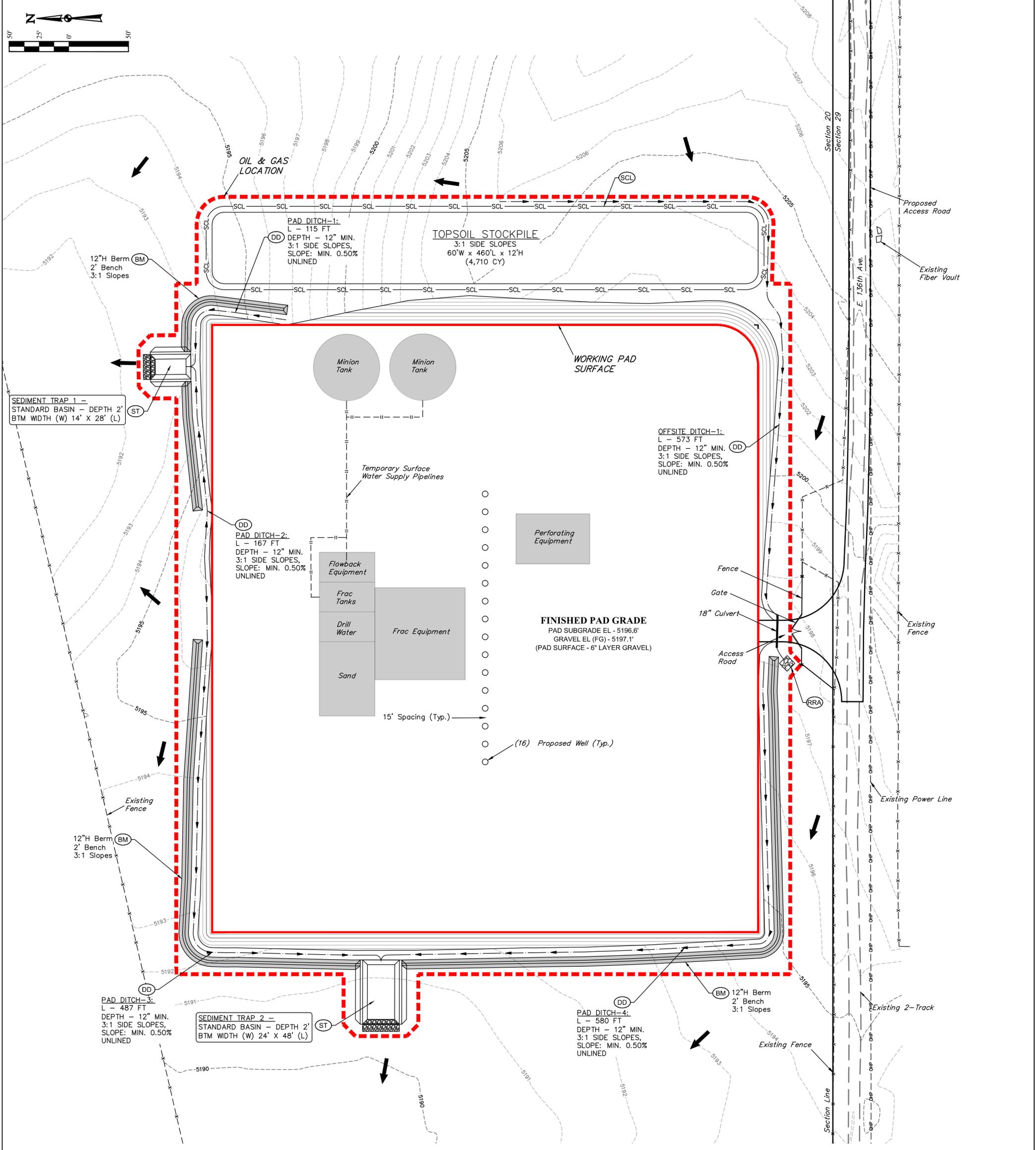
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Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY DRILL RIG LAYOUT



LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:

- Contours shown at 1' intervals.
- Overall working pad surface = 510' x 460'
- Cut/Fill slopes 3:1 (Typ.).

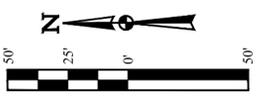
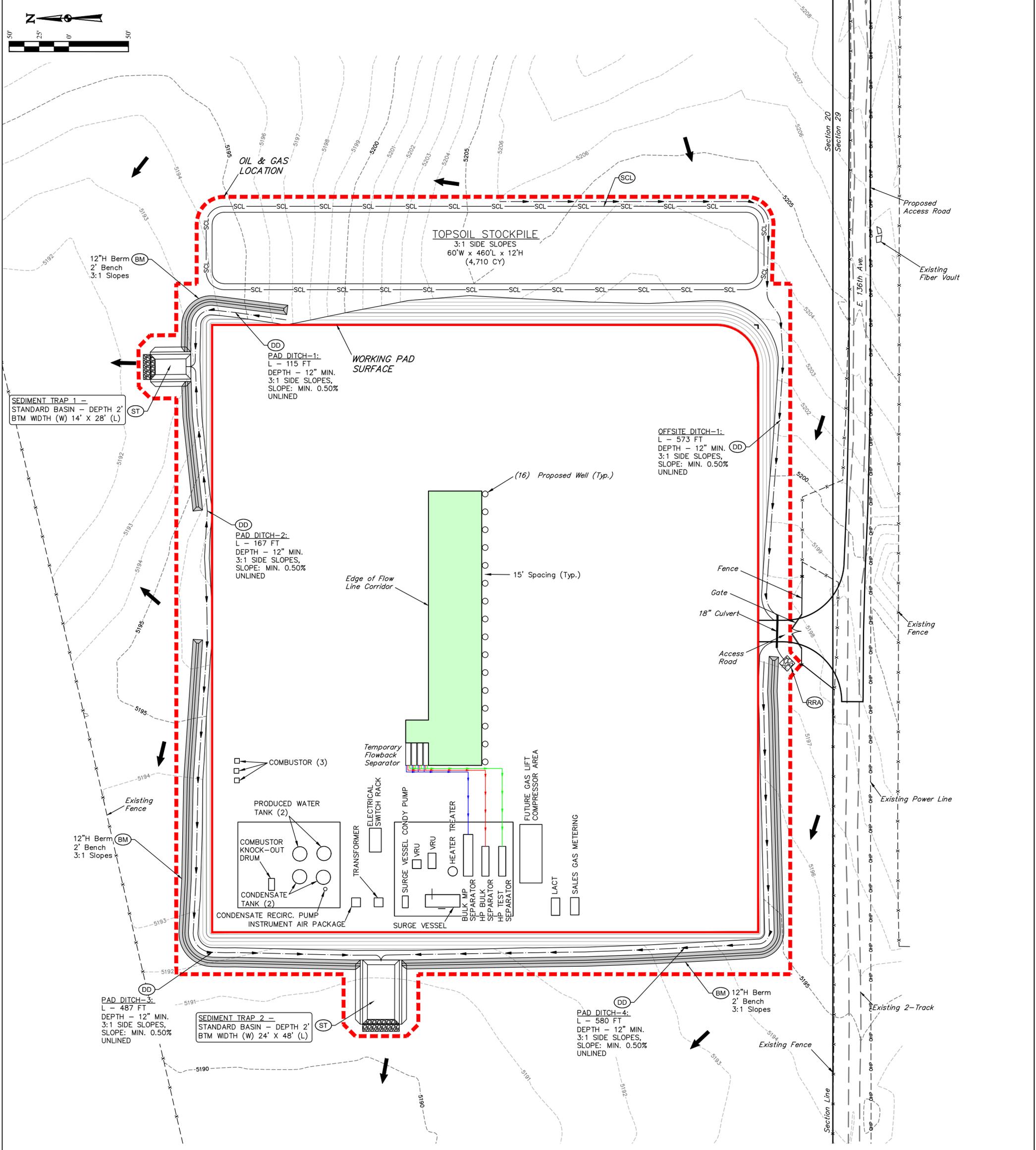
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 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY WELL COMPLETION & STIMULATION LAYOUT



LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:

- Contours shown at 1' intervals.
- Overall working pad surface = 510' x 460'
- Cut/Fill slopes 3:1 (Typ.).

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 Vernal, UT 84078 * (435) 789-1017

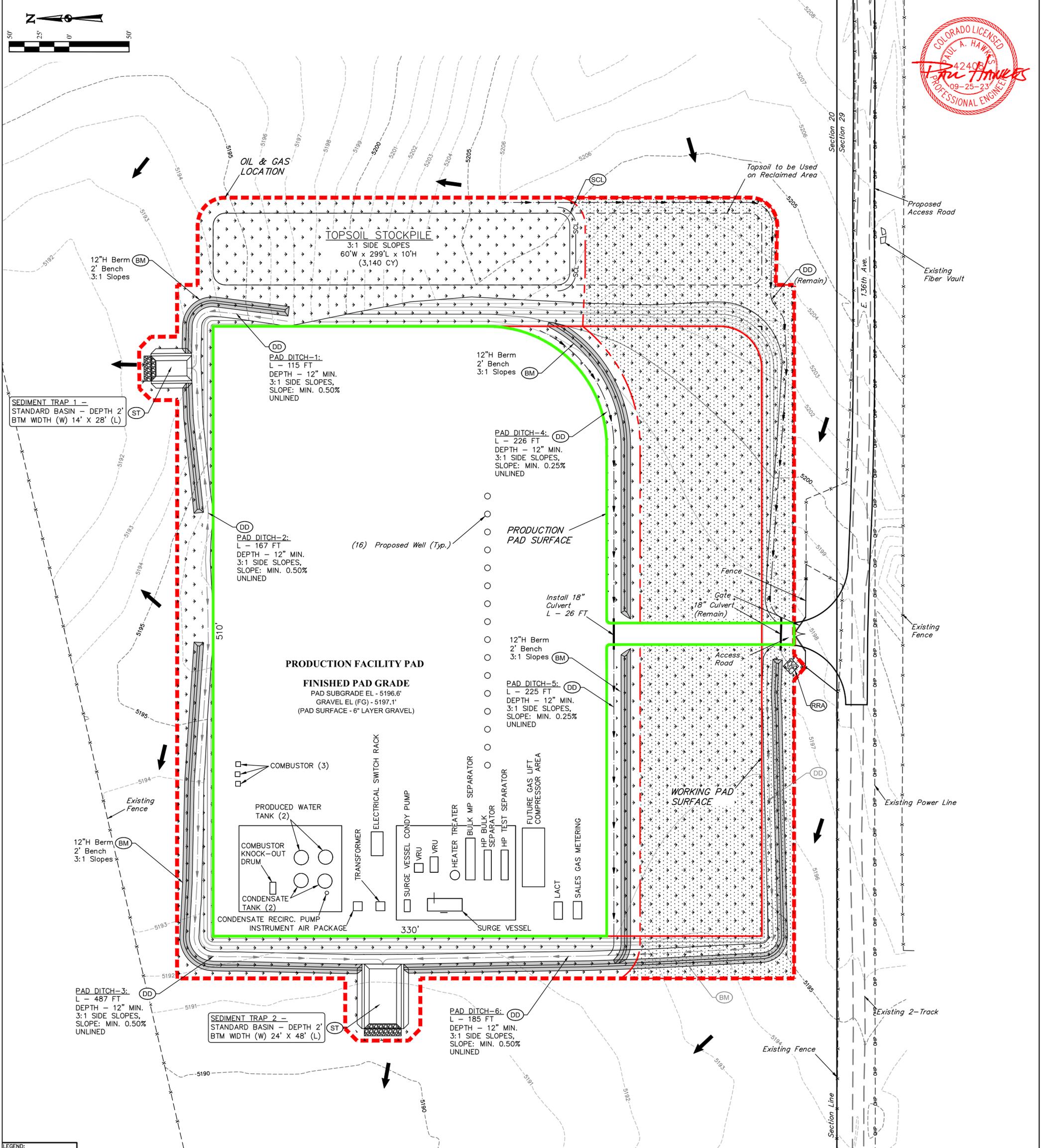
REV: 2 09-25-23 P.M. (ADD LACT)

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY FLOWBACK EQUIPMENT LAYOUT



APPROXIMATE UN-RECLAIMED ACREAGE = ±5.797 ACRES
 APPROXIMATE RECLAIMED ACREAGE = ±2.010 ACRES
 TOTAL OIL & GAS LOCATION = ±7.807 ACRES

SIZE OF DISTURBED AREA AFTER INTERIM RECLAMATION IN ACRES (COGCC 2A REPORTABLE): 5.797 ACRES

LEGEND			
	DD DIVERSION DITCH		BM BERM
	OP OUTLET PROTECTION		DD DIVERSION DITCH TO BE RECLAIMED
	ST SEDIMENT TRAP		ST SEDIMENT TRAP TO BE RECLAIMED
	SCL SEDIMENT CONTROL LOG		BM BERM TO BE RECLAIMED
	SM SEEDING AND MULCHING		EXISTING FENCE
	EXISTING MINOR CONTOUR		EXISTING MAJOR CONTOUR
	PROPOSED MAJOR CONTOUR		PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE		PRODUCTION PAD SURFACE
	OIL & GAS LOCATION		LIMITS OF PERMANENT DISTURBANCE

NOTES:
 • Contours shown at 1' intervals.
 • Overall working pad surface = 510' x 460'
 • Cut/Fill slopes 3:1 (Typ.).

UETAH
 ENGINEERING & LAND SURVEYING

UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

REV: 2 09-25-23 P.M. (ADD LACT)

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

FACILITY LAYOUT

Permanent Signage



POCO Operating
Wakeman 20-17 Wellpad
SW/4SE/4
Section 20 T1S R65W
Adams County, Colorado
Location ID: 461092

24/7 Emergency Contact
720-935-8256

All signage will adhere to ECMC 605. Proper signage will be posted in a conspicuous place from the time of initial drilling until final abandonment. It will be posted at the intersection of the lease road and the public road providing access to the well site.

During drilling and completion operations, directional sign will be provided by the contractor. They will be posted at significant locations for emergency response crews. At a minimum, they will be posted at the first point of the access road and 136th Ave. The sign will be made out of sheet metal and will be at least 3' x 6'.

Permanent Signage



POCO Operating
Wakeman 20-17 4CDH
SW/4SE/4
Section 20 T1S R65W
Adams County, Colorado
Location ID: 461092

24/7 Emergency Contact
720-935-8256

All signage will adhere to ECMC Rule 605. Within 60 days of completions, a permanent sign will be installed at the wellhead which will identify the well name, number, legal location, including quarter quarter.

CONSTRUCTION STORMWATER MANAGEMENT PLAN



PROVIDENCE

9635 Maroon Circle, Suite 230
Englewood, CO 80112

**Providence Operating LLC DBA POCO Operating
Wakeman 20-17 Pad
Brighton, Colorado**

November 2022

Aquionix
EHS Services

5545 W. 56th Avenue, Suite E
Arvada, CO 80002
(303) 289-7520
www.aquionix.com

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*Providence Operating LLC DBA POCO Operating
Wakeman 20-17 Well Pad
Construction Stormwater Management Plan*

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Appendix B Construction Stormwater Permit Overview Map
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INTRODUCTION

This Construction Stormwater Management Plan (SWMP) for Construction Activities has been prepared to comply with the Colorado Department of Public Health and Environment's (CDPHE) General Permit (COR400000) for *Stormwater Discharges Associated with Construction Activities*. This SWMP addresses construction activities associated with Providence Operating LLC DBA POCO Operating's (POCO) oil and gas production activities in Adams County, Colorado. The General Permit can be found in Appendix A and, upon receipt, a copy of the Certification to Discharge will similarly be incorporated into Appendix A.

This SWMP is intended to be revised as necessary to address planned developments, new disturbances, and other changes required to manage stormwater and protect surface water quality. Significant changes to the SWMP will be documented in the Revision History table in this Plan.

Oil and gas activities in Colorado are subject to the Colorado Oil and Gas Conservation Commission (COGCC) rules and regulations. The 1000 series Reclamation Regulations require that operators implement Stormwater Management under Rule 1002.f. This rule requires operators to implement and maintain control measures at locations to control stormwater runoff in a manner that minimizes erosion, transport of sediment off site, and site degradation. This requirement is in effect for the life of the facility (construction to abandonment).

While this facility maintains coverage under the CDPHE General Permit and this SWMP, the requirements of COGCC Rule 1002.f. are satisfied. Once the location achieves final stabilization and is removed from permit coverage under the CDPHE General Permit, the COGCC rules require that a Post-Construction Stormwater Program be implemented.

CERTIFICATION

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: Devin Brown

Title: VP of Operations

Date: _____

SWMP MANAGERS

The SWMP Manager(s) is responsible for making sure the SWMP is implemented in its entirety and must be knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet permit requirements.

SWMP MANAGER TABLE			
Name	Title	Phone	Email
Devin Brown	VP of Operations (POCO Operating)	303-349-0302	dbrown@providence-energy.com
Meghan Grimes	Sr. Manager of ESG (POCO Operating)	720-256-8774	mgrimes@providence-energy.com
Josh Berger	Lease Operator	970-373-8048	josh@cadenceenergyservices.com
Jim Berger	Lease Operator	970-481-6372	jamesberger2@aol.com

Additionally, the SWMP Manager(s) may delegate responsibility for the coordination of the following to specific personnel:

- Implementation of upset condition/clean-up procedures;
- Notification to regulatory agencies, local authorities and local residents in the event of a significant release of stormwater and/or sediment from a construction area;
- Coordination/implementation of control measures (formerly known as Best Management Practices (BMPs));
- Conducting inspections (as long as the person conducting inspections is also a qualified SWMP Manager);
- Maintenance of stormwater-related records; and
- Coordination of a preventative maintenance program and housekeeping measures.

REVISION HISTORY

When this SWMP is amended or updated, the following table should be updated with date of revision, author(s), a description of the revision(s) and an approval signature. A copy of the current SWMP shall be maintained at the construction site and be made available to the Water Quality Control Division (WQCD) of the Colorado Oil and Gas Conservation Commission (COGCC), or another Federal, State, or local agency having stormwater program authority upon request.

REVISION HISTORY TABLE		
Revision Date	Revised By	Description of Revisions (Include control measure information (control measure(s) removed, modified; the location of these control measures; and any changes to the control measure(s))
11/2022	Aquionix, Inc.	Initial release.

1.0 SITE DESCRIPTION

POCO currently owns or leases mineral rights within Adams County, Colorado. The project area is located in the SWSE quadrant of Section 20 Township 1 South, Range 65 West in Adams County, Colorado, as depicted on the site-specific vicinity waters map in Appendix D. The total area of disturbance will be approximately 7.8 acres. After interim reclamation, the disturbed area will be approximately 5.8 acres and the working pad surface will be approximately 4 acres. The City of Brighton, Colorado is the nearest population center to the Wakeman 20-17 development activities.

Current drilling and development construction activities include pad construction, access road construction, well drilling, well testing, well completion, installation of the associated facility, and flow line construction. The pad will tie-in to Williams mid-stream pipelines.

1.1 Nature of Construction Activity

The nature of construction activities associated with POCO's Wakeman 20-17 facility will involve the construction of access roads, a multi-well pad, and various production equipment. The location of the Wakeman 20-17 facility will require engineered cut and fill for the construction of the well pad. Following construction of the well pad, drilling, and completion operations will occur to bring the well into production.

In areas that are disturbed by construction, topsoil will be stripped and stockpiled near the site. Deleterious organic materials will be stockpiled separately from the topsoil. Soil materials will be managed so that erosion and sediment transport are minimized. Nearby drainages will be protected by appropriate measures.

Once the well is in production, portions of the disturbed area will be reclaimed.

1.2 Sequence of Major Activities

The development of the Wakeman 20-17 production facility will be accomplished in the following work phases. They include:

- Pad Construction
- Production Equipment Installation
- Well Drilling
- Well Completion
- Interim Reclamation
- Final Reclamation

Each work phase is briefly discussed below, and the control measures are discussed in Section 3.0.

1.2.1 Access Road and Pad Construction

Pad and access road construction will be performed using conventional cut and fill construction. The proposed access road for the Wakeman 20-17 well pad will tee off East 136th Avenue. The pad will be located on the north side of East 136th Avenue. Cut and fill is anticipated for the access road using road base or aggregate.

The overall disturbed area of the well pad and the access road is anticipated to be approximately 7.8 acres. The pad construction will involve clearing and grubbing, the removal of topsoil to a stockpile along the eastern boundary of the disturbed area, grading, compaction, contouring, and installation of road base as a surfacing material. To the extent possible, permanent control measures such as berms, diversion ditches, and sediment traps will be utilized to control stormwater throughout the life of the facility during this phase.

Sediment discharge and small amounts of mobile equipment lubricant and fuel are the main potential pollutants of concern during access road and pad construction.

1.2.2 Well Drilling

Well drilling for the Wakeman 20-17 well will include the following activities:

- Mobilization of the drilling rig and associated equipment including generators and drilling-mud handling equipment
- Storage of chemicals, fuels, and lubricants;
- Installation of potable water tanks and sewage-handling equipment (e.g., portable toilets or sewage vaults);
- Well drilling activities, including the installation and cementing of well casing; and
- Demobilization of the drilling rig and all other equipment at the completion of this phase.

Sediment discharge, releases of unused and used chemicals, petroleum products, drilling water/mud, and drill cuttings are potential pollutants of concern during this phase of construction. Drilling mud and water will be used to maintain appropriate downhole pressures and lubrication. Fresh water and drilling mud (including chemical additives) will be stored on the pad, typically in large tanks or skid-mounted vertical tanks. Drilling mud and associated materials are captured in tanks for reuse during closed-loop drilling processes. Products used in the drilling process to fuel, lubricate, and/or maintain equipment include diesel fuel, unleaded gasoline, gear oil, hydraulic oil, brake fluid, antifreeze, and grease. Materials to be used for cementing casing may also be stored and prepared on location or may be transported to the site.

1.2.3 Well Completion

Well completion may last up to 190 days, will include cementing and other processes that stimulate the well and prepare it for production. The basic activities that are conducted during this phase include:

- Mobilization of equipment required for well completion activities;
- Installation of potable water tanks and sewage-handling equipment (e.g., portable toilets) or continued maintenance of such equipment installed during the drilling phase; and
- Demobilization of equipment when this phase has been completed.

Sediment discharge, releases of unused and used chemicals, and flowback water are potential pollutants of concern during this phase of construction. As equipment is demobilized at the completion of this phase, the well pad and surrounding areas will be inspected to identify spills or leaks that may have occurred and may impact surface water so that those areas can be remediated.

1.2.4 Production Equipment Installation

The Production Equipment Installation phase includes the construction of the final production equipment for the Wakeman 20-17 well pad. This phase will take place prior to the drilling phase. See list of final production equipment in sections 1.2.6.

Sediment discharge, releases of produced fluids, and small amounts of equipment lubricant or fuel, corrosion inhibitors or other chemicals are potential pollutants of concern during this phase.

1.2.5 Disturbance Reduction and Final Stabilization

Following construction, drilling, and completion, the disturbed area of the well pad will be reduced for the production life of the well to approximately 4 acres. Enough working area will remain to allow a safe working environment for pumpers, haulers and/or periodic workover operations, and vehicle traffic is expected to be minimal. The pad will be recontoured, topsoil reapplied, and the reduced area stabilized with seed, hydro-seed, bonded fiber matrix, or mulch. as deemed appropriate.

1.2.6 Production

While the lifespan of the Wakeman 20-17 facility covered in this SWMP may last up to 50 years, the actual productive life of the well will be dependent on the producing formation, location in the field, and proximity to other wells.

Final stabilization of the disturbed area outside the production area is generally achieved during this phase.

1.2.7 Abandonment

Once the Wakeman 20-17 well is deemed ready to abandon, the location will be recontoured and reclaimed to pre-disturbance conditions and/or in accordance with the surface owner's wishes.

When the well is plugged and abandoned, the wellhead assembly will be removed and the well permanently plugged down hole. The equipment associated with the well will be removed from the location unless being used by other wells in the vicinity, and the flow lines and pipelines may be re-routed or abandoned as required.

Following the removal of equipment from the well pad, the location and access roads will be recontoured and reclaimed to pre-disturbance conditions in accordance with COGCC final reclamation standards and/or in accordance with the surface owner's wishes. Once it is recontoured, topsoil will be reapplied across the location in preparation for seeding and an appropriate seed mixture will be applied.

1.3 Estimate of Total Area of Site and Disturbed Area

The total area of disturbance will be approximately 7.8 acres. After interim reclamation, the disturbed area will be approximately 5.8 acres and the working pad surface will be approximately 4 acres, which includes access roads.

1.4 Soil Description

Erosion potential is based primarily onsite topography, soil type, and vegetative cover. Per the United State Department of Agriculture's (USDA) Web Soils Survey, the major soil types that will be disturbed are well-drained soils with a moderately high to high-water holding capacity and are classified as:

- 21.5% Ascalon Sandy Loam, 0 to 3 percent slopes
- 23.8% Ascalon Sandy Loam, 3 to 5 percent slopes
- 54.8% Vona Loamy Sand, 3 to 9 percent slopes

The soils typically are situated on little to no sloping (<3 percent) to gentle sloping (<9 percent) land. Topsoil is typically shallow with a high percentage of loam composition. The average annual precipitation for the area is approximately 12 - 17 inches

1.5 Vegetation Description

Vegetation in the vicinity of the facility is predominately grassland associated with grazing land. Wild grasses account for over 90% of the existing ground cover at the Wakeman 20-17 facility.

1.6 Potential Pollution Sources and Locations

POCO has identified activities, equipment, and materials associated with the construction of the Wakeman 20-17 well pad that may potentially be sources of pollutants that contribute, or have the potential to contribute, pollutants to stormwater. The following sections provide an overview of the identified potential pollutant sources. The site-specific map contained within Appendix D shows the locations of these potential pollutant sources at the Wakeman 20-17 facility.

1.6.1 Erosion of Disturbed and Stockpiled Soils

The construction activities for the well pad and access road will involve soil disturbances and stockpiling. Clearing, grading, and otherwise altering previously undisturbed land can greatly increase the rate of soil erosion over pre-disturbance rates. The resulting sediment can impact the water quality of receiving streams.

Appendix C contains the figures from the surveying company showing anticipated disturbance area, including cut, fill, and stockpile location. Appendix D contains the figures showing the control measures that will be implemented to manage stormwater during construction and production.

1.6.2 Drill Cuttings

During the drilling process, cuttings from down hole will be separated from the drilling mud and will be contained and managed on site. POCO will employ closed-loop drilling techniques. The drill cuttings will be mechanically separated from water-based bentonitic drilling fluids and stored in a 20 cubic yard roll-off container on location and will demonstrate compliance with Table 915-1 through sampling and analysis. The drill cuttings will comply with Table 915-1, will not be considered oily waste, and will be generated using water-based bentonitic drilling fluids. The cuttings are transferred from the roll-off container to a transport truck and hauled to a permitted disposal facility.

1.6.3 Vehicle Tracking of Sediment

Offsite sediment tracking by vehicles is a potential pollutant source to stormwater and waters of the State. To address offsite sediment tracking, the access road may have a track pad at the intersection with the nearby county road and the well pad will be surfaced with rock, as needed, to minimize offsite vehicle tracking. Furthermore, staff and contractor awareness will reduce the likelihood of offsite sediment tracking by limiting the areas of operations during muddy conditions.

1.6.5 Loading and Unloading Operations

The sites may have tanks for the storage of fuels or other materials used in drilling and completion activities. The presence of such tanks would require loading and unloading of the tanks and releases of materials during these activities could potentially impact stormwater.

1.6.6 Outdoor Storage and Material Handling Activities

During the drilling and completion phases of the project, quantities of well construction and completion materials such as cement, drilling mud, cuttings, sawdust, sand, and other materials will be staged on location and moved around the location as the well is drilled and completed. Releases of these materials from storage areas or during material handling activities could potentially impact stormwater.

1.6.7 Vehicle and Equipment Maintenance and Fueling

It is possible that equipment will be maintained or fueled on site. On-site maintenance and fueling could potentially result in leaks or spills of fuel, gear oil, hydraulic oil, brake fluid, antifreeze, or grease which could potentially impact stormwater.

1.6.8 Significant Dust or Particulate Generating Processes

Construction activities and vehicle traffic to and from the site could potentially generate dust. Strong winds, frequently encountered in the vicinity of the proposed well pad, have the potential to discharge windblown sediment from disturbed areas.

1.6.9 Routine Maintenance Activities

The use of fertilizers or weed killers is possible at the site in order to achieve successful revegetation of disturbed areas. See also “vehicle and equipment maintenance and fueling” above.

1.6.10 On-site Waste Management Practices

Trash receptacles will be located on site to contain construction-related or other trash or debris. Used drilling mud and water will be captured in tanks during closed-loop drilling processes and portable toilets will also be utilized on site.

1.6.11 Concrete Truck/Equipment Washing

Concrete truck or equipment washing is not expected. Highly specialized concrete trucks will be on site during well casing operations. The concrete could be prepared on site and truck cleaning will be done off site by third party contractors.

1.6.12 Dedicated Asphalt and Concrete Batch Plants

Dedicated asphalt and concrete batch plants are not expected.

1.6.13 Non-Industrial Waste Sources

All project phases involve people working on site. This can generate personal and work-related trash and debris and may necessitate the use of portable toilets. Clearing operations may generate waste in the form of slash (trees, brush, etc.).

1.7 Non-Stormwater Discharges

Stormwater discharges from the Wakeman 20-17 facility will consist entirely of runoff from precipitation events and allowable non-stormwater discharges identified below. This condition is verified on a regular basis through site inspections.

Other allowable non-stormwater discharges, provided that appropriate control measures are implemented, may include:

- Discharges resulting from emergency firefighting activities during active emergency response;
- Discharges from uncontaminated spring water that do not originate from an area of land disturbance;
- Discharges of landscape irrigation return flow;
- Discharges to the ground of concrete washout water (see below); and
- Discharges from diversions of state waters within the permitted site.

Concrete washout is not anticipated at the Wakeman 20-17 facility.

COR400000 does not authorize discharges currently covered by a Division Low Risk Discharge Guidance Document, including uncontaminated groundwater discharge to the ground. In the event that uncontaminated groundwater must be discharged to the ground, the Division's Low Risk Discharge Guidance shall be followed.

COR400000 also does not authorize discharges associated with construction dewatering, which may include groundwater, surface water, and stormwater that has mixed with groundwater and/or surface water (i.e., commingled stormwater runoff). In the event that discharges associated with dewatering activities are deemed necessary, authorization under the CDPS General Permit, *Construction Dewatering Discharges*. (COG070000) shall be obtained.

1.8 Receiving Waters

The planned disturbances for the POCO Wakeman 20-17 pad operations lie within the South Platte River Basin. For more detail on receiving waters, see the site-specific vicinity waters map in Appendix D.

2.0 SITE MAPS/DIAGRAMS

The control measures anticipated for the Wakeman 20-17 facility are depicted on the site-specific maps in Appendix D of this Plan. The maps will be regularly updated to reflect changes to the facility.

2.1 Construction Site Boundaries

The disturbed area for the Wakeman 20-17 well pad is approximately 7.8 acres; however, the actual well pad footprint is smaller, as shown in the plat maps in Appendix C.

2.2 Areas of Ground Disturbance

An approximate 4 acres well pad footprint is anticipated within the 7.8 acres of planned disturbance.

2.3 Areas of Cut and Fill

The southwestern half of the well pad footprint is anticipated to be cut with the northeastern half receiving some fill to construction a level surface area for operation.

2.4 Storage Areas

POCO anticipates stockpiling topsoil to the exterior of the well pad footprint but within the disturbed area. Fuel, construction materials, and other chemical storage areas are shown on the individual site map in Appendix D.

2.5 Location of Asphalt and Concrete Batch Plants

Asphalt or concrete batch plants are not planned for the Wakeman 20-17 facility.

2.6 Locations of Structural Control Measures

The locations of structural control measures, where applicable, are shown on the figures in Appendix D.

2.7 Locations of Non-Structural Control Measures

The locations of non-structural control measures, where applicable, are shown on the figures in Appendix D.

2.8 Locations of Springs, Streams, Wetlands and Other Surface Waters

The locations of springs, streams, wetlands, and other surface waters in proximity to the Wakeman 20-17 facility are shown on the site-specific vicinity waters map in Appendix D.

The first priority receiving waters at risk is an Unnamed Ditch located approximately 3,000 feet southwest of the Wakeman 20-17 well pad. Secondary priority bodies of water include the Denver Hudson Canal which is approximately 2 miles northwest, and Barr Lake located approximately 3.1 miles west of the Wakeman 20-17 well pad.

2.9 Implementation of Control Measures Outside of the Permitted Area

In accordance with the general permit, control measures located outside of the permitted area that are utilized by the construction site for permit compliance but are not owned or operated by POCO, must be documented and include a documented use agreement between POCO and the owner/operator of the control measure(s). Such control measures would be included on site-specific maps and any associated usage agreement documentation appended to this Plan.

3.0 STORMWATER MANAGEMENT CONTROLS

The following sections present POCO's stormwater management controls to be implemented at the Wakeman 20-17 location prior to and during construction activities to prevent erosion, control sediment, and prevent impacts to stormwater leaving the site.

3.1 Control Measures for Stormwater Pollution Prevention

This section describes the control measures that will be used for stormwater pollution prevention. Appendix C contains the control measure installation and implementation guidance. Control measures may be added or removed from Appendix C to accommodate changes in site conditions and activities.

3.1.1 Structural Practices for Erosion and Sediment Control

POCO intends to utilize the following structural control measures to control sediment migration from the facility during construction:

- Earthen Berm: An earthen berm shall be constructed around the southern, western and northern boundaries of the well-pad.
- Drainage ditch: A drainage ditch shall be constructed around the southern, western and northern boundaries of the well pad.
- Sediment Control Log: A sediment control log will be placed on the southern boundary of the topsoil stockpile.
- Mulch/Seed: Topsoil stockpiles that will be exposed for more than six months will be mulched and/or seeded as a stabilization technique to control sediment loss.
- Sediment Control Pond: Pads with rip-pad protected outfalls designed to allow sediment to precipitate out of water and allow the water without sediment out off the property will be constructed on the northeastern and northwestern corners of the pad.
- Vehicle Tracking Pad: Vehicle tracking pads are a type of vehicle tracking control which minimize tracking of sediments from the well pad to paved road surfaces. A vehicle tracking pad will be constructed along the access road.
- Rock Check Dams: Rock check dams are temporary grade control structures placed in drainage channels to limit the erosivity of stormwater by reducing flow velocity. Rock check dams shall be constructed within the drainage ditches at the well-pad.

The surrounding topography of the location is relatively flat. As construction progresses, BMPs will be assessed, installed, and/or replaced as needed. Descriptions, design, installation practices, and maintenance and removal considerations for the structural control measures available for use can be found in Appendix F.

3.1.2 Non-Structural Practices for Erosion and Sediment Control

POCO intends to utilize the following non-structural control measures to control sediment migration from the facility during construction:

- Training: Those persons responsible for inspections and monitoring will be trained on the contents of the Plan and the requirements herein.
- Minimize Compaction: POCO will limit traffic outside of the well pad footprint but within the disturbed area, to the extent possible, to reduce compaction in areas where infiltration control measures will occur or where final stabilization will be achieved through vegetative cover.
- Stockpile Tracking: To prevent erosion, stockpiles will be tracked perpendicular to runoff direction.
- Stockpile Location: Whenever possible, stockpiles will be located away from drainage system components and outfalls, and, where practical, stockpiles will be placed in areas that will remain undisturbed for the longest period of time as the phases of construction progress.

3.1.3 Phased Control Measure Installation

Control measure implementation will be coordinated with the various stages of construction. Run-on protection and runoff controls will be installed prior to earth disturbing activities where necessary, with consideration given to worker safety, access, and prevailing drainage patterns. As the well pad construction comes to a close, and control measures are no longer needed, they will be removed.

Permanent or temporary stabilization measures for slopes, channels, ditches, disturbed land areas, and soil stockpiles will be implemented as soon as practicable after final grading or the final ground disturbance has been completed. When it is not possible to permanently stabilize a disturbed area, temporary erosion control measures will be implemented as soon as practicable.

3.1.4 Materials Handling and Spill Prevention

POCO personnel and contractors will handle and store materials in a manner that prevents stormwater impacts and spills to the extent practicable. Where feasible, significant material storage areas will be kept covered to prevent contact with stormwater.

The following guidelines for storing and managing petroleum products will be implemented:

- Product containers will be clearly labeled.
- Drums (if present) will be kept within secondary containment or general site containment (i.e. perimeter berm), and may also need to be kept off the ground. Lids for drummed materials will be securely fastened.

- Fuel tanks will be stored within secondary containment, general site containment, or stored to minimize impacts to stormwater.
- Persons trained in handling spills will be on call at all times; POCO field personnel are trained on spill management procedures annually.
- Storage areas and containers will be regularly monitored for leaks and repaired or replaced as necessary.

Oily wastes such as used oil filters, empty containers, rags, and sorbent pads and socks containing oils will be placed in proper receptacles and disposed of or recycled. Routine inspections will be conducted to identify leaks from equipment and vehicles and if needed corrective actions will be implemented.

3.1.5 Stockpile Stabilization

During facility construction, topsoil should be piled no higher than three to five feet high and slopes of the stockpiles should not exceed a 2:1 width to height ratio to minimize erosion potential and facilitate interim stabilization.

Whenever possible, topsoil will not be stockpiled for longer than six months. Topsoil stockpiled for more than six months will be seeded and mulched with a temporary grass cover or will be stabilized using structural and/or non-structural control measures.

Topsoil stockpiles should be fenced and uniquely identified on facility drawings in accordance with COGCC 1000 series rules. Perimeter control measures such as sediment control logs, rock socks, straw bales, ditch and/or berm with sediment trap(s) or sandbags should be used around the base of unstabilized stockpiles or where there is potential for sediment to come in contact with runoff and leave the site.

3.1.6 Other Material/Chemical Product Management

Chemicals and other materials such as cement, sand, and sawdust that are utilized during facility construction, drilling, or completions activities will be stored in accordance with manufacturer's recommendations; generally, in original packaging and/or otherwise covered to ensure that the raw material does not come into contact with stormwater. Storage or laydown areas employed during construction activities will be regularly inspected for spills, leaks, and the potential of materials commingling with stormwater.

3.1.7 Spill Response

Spills are to be reported to the SWMP manager(s) immediately. Spills of produced fluids and exploration and production (E&P) waste that are greater than one barrel (25 gallons) outside of secondary containment or greater than five barrels (125 gallons) that are inside of secondary containment, will be reported to the COGCC by POCO or their designated agent. Spills of refined petroleum products, unused chemicals, and other non-E&P waste will be evaluated on a case-by-case basis and any spills that exceed a reportable quantity will be reported to the appropriate state or federal agency by POCO or their designated

agent. As needed, POCO personnel will review Safety Data Sheets (SDS) for information on spills of chemicals or other materials.

POCO will coordinate the appropriate personnel to handle spills in accordance with POCO's Emergency Response Plan. Spills will be controlled and contained as soon as practicable upon discovery and cleaned up as soon as practicable. Spilled material and/or contaminated soil will be disposed of in accordance with all applicable regulations, generally at a commercial landfill or disposal facility. De minimis spills of inert construction materials such as bentonite, concrete, and sawdust used in drilling and completion will be cleaned up as soon as practicable after drilling and completion activities are completed

3.2 Dedicated Asphalt or Concrete Batch Plants

Dedicated asphalt or concrete batch plants are not expected at the Wakeman 20-17 well pad location.

3.3 Vehicle Tracking

In order to limit vehicle tracking of sediment, vehicles will use designated entry points into construction areas. Stabilization methods, such as road base, chemical stabilizers, and/or a Vehicle Tracking Control (VTC) (See VTC detail in Appendix F) will be used where necessary. In general, the use of TPs is not anticipated to be necessary in the project area due to the sandy, non-cohesive nature of the soils in the project area. The locations of vehicle tracking control measures will be shown on the site maps where applicable.

3.4 Waste Management

3.4.1 Waste Management and Disposal

Exploration and production wastes will be managed in accordance with the COGCC 900 Series rules. Construction-related and other trash will be collected in dumpsters and containers and hauled off-site for disposal in commercial landfills as soon as practicable. Dumpsters will be covered during times when construction activities are not occurring. POCO expects that contractors will pick up loose trash and debris.

Portable toilets may be used to contain sanitary waste, with waste materials regularly pumped and transported off-site for disposal at approved facilities. Portable toilets will be secured when a risk of tippage is present.

3.4.2 Concrete Washout

Concrete washout is not expected within the project site. However, if the need for concrete washout arises, an appropriate containment structure will be utilized. See Section 1.7 above for more information. The locations of any waste containments or concrete washout areas on site will be shown on the site maps.

3.5 Ground Water and Stormwater Dewatering

3.5.1 Groundwater Dewatering

No groundwater dewatering is expected at this time. If groundwater is encountered, refer to Section 1.7 above for information.

3.5.2 Stormwater Dewatering

If the need for stormwater dewatering is encountered, control measures will be utilized to prevent erosion and trap sediment. See Dewatering Operations (DWO) in the Control Measures Design Manual for control measures descriptions for dewatering operations. The control measures to be utilized will be shown on the site map. See Section 1.7 above for more information.

3.6 Control Measure Maintenance

Erosion and sediment control measures implemented under this Plan will be maintained in effective operational condition, in accordance with the manufacturer's specifications and good engineering, hydrologic and pollution control practices. Routine inspections include a provision to evaluate the effectiveness of each implemented control measures and identify when maintenance is required.

When control measures maintenance or replacement is required, POCO will correct the issue as soon as possible to minimize the discharge of pollutants. When new control measures are installed or replaced, this Plan will be updated accordingly.

4.0 FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

Final stabilization must be implemented for all construction sites covered under General Permit COR400000. A site is considered to be in final stabilization when a location meets interim reclamation in accordance with COGCC Rule 1003 has been achieved and (1), (2), and (3) below are complete:

- (1) All construction activities are complete;
- (2) Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces, vegetative cover, or equivalent permanent alternative stabilization methods (alternative methods may be approved by the Division). Vegetative cover must meet the following criteria:
 - a. Evenly distributed perennial vegetation; and
 - b. Coverage, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.
- (3) The permittee must ensure that all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e., biodegradable control measures).

Specific control measures for soil preparation and amendment, soil stabilization, and sediment control during final stabilization will be selected and applied, as needed.

5.0 INSPECTIONS AND MAINTENANCE PROCEDURES

Site inspections will be conducted in accordance with the requirements and minimum schedule outlined in Part I.D.2 of the CDPS General Permit (COR400000). The requirements are as follows:

- The first site inspection must be completed within seven (7) calendar days of the commencement of construction activities.
- Active construction sites will be inspected at one of the two following frequencies:
 - At least one inspection every 7 calendar days; or
 - At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Note that post-storm inspections may be used to fulfill the 14 day routine inspection requirement.

POCO has elected to inspect at least once every 7 days at the Wakeman 20-17 facility during active construction.

- If a site is considered temporarily idle, that is, no construction activities will occur following a storm event, then a post-storm inspection will be conducted prior to re-commencing constructing activities, no later than 72 hours following the storm event. Routine inspections must still be conducted at least every 14 calendar days.
- For sites or portions of sites in which all construction activities that will result in ground disturbance are completed, all activities for final stabilization, as outlined above in Section 4, with the exception of vegetative coverage are completed, and this SWMP has been amended to locate the areas to be inspected, inspections will be conducted at least once every 30 days, and post-storm inspections are not required.
- Inspections are not required at sites where snow cover exists over the entire site for an extended period of time and construction activities are halted, as long as melting conditions do not exist. The following information must be documented in the inspection record for the use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began. This only applies when all construction activities cease and typically only at high elevations.
- For sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Division, inspections will be performed at least once every 7 calendar days.

A person identified as a SWMP Manager (see beginning of this Plan) will conduct inspections. The scope of the inspection will cover the construction site perimeter, disturbed areas, designated haul routes, material and/or waste storage areas that are exposed to precipitation, discharge locations, and locations where vehicles access the site. These areas will be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries entering the stormwater drainage system or discharging to waters of the state. Erosion and sediment control practices identified in this SWMP will be evaluated to ensure that they are maintained and operating correctly.

Personnel performing site inspections will record the information as outlined below on the inspection report. This inspection report will identify any incidents of non-compliance with the terms and conditions of the general permit and this SWMP. The inspection report will include:

1. The inspection date;
2. Name(s) and title(s) of personnel making the inspection;
3. Weather conditions at the time of inspection;
4. Phase of construction at the time of inspection;
5. Estimated acreage of disturbance at time of inspection;
6. Location(s) of discharges of sediment or other pollutants from the site;
7. Location(s) of control measures that need to be maintained;
8. Location(s) of control measures that failed to operate as designed or proved inadequate for a particular location;
9. Location(s) where additional control measures are needed that were not in place at the time of inspection;
10. Description of the minimum inspection frequency utilized when conducting inspection;
11. Deviations and reason for deviation from the minimum inspection schedule as outlined above;
12. Description of corrective action for items 3, 4, 5, and 6, above, dates corrective action(s) taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary; and
13. After adequate corrective actions have been taken, or where a report does not identify any incidents requiring corrective actions, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

A sample Routine Inspection Form can be found in Appendix E of this Plan.

Where site inspections note the need for control measure maintenance activities, control measures must be maintained in accordance with the SWMP and the General Permit. Repair, replacement, or installation of new control measures determined necessary during site inspections to address ineffective or inadequate control measures must be conducted in accordance with the permit. SWMP updates required as a result of deficiencies in the SWMP noted during site inspections shall be made in accordance with the General Permit.

6.0 SWMP REVISION, RECORDS AND RETENTION

Pursuant to the General Permit, this SWMP has been prepared prior to commencement of any construction activity. A complete, accurate, and signed permit application shall be submitted electronically at least 10 days prior to the commencement of construction activities, except in the event of construction activities in response to a public emergency (in which an application shall be submitted no later than 14 days *after* the commencement of construction activities).

6.1 SWMP Retention Requirements

A copy of the SWMP must be retained on site unless another location, specified by the permittee, is approved by the Division.

6.2 SWMP Review and Changes

The SWMP shall be amended if the following occurs:

- When there is a change in design, construction, operation, or maintenance of the site, which would require the implementation of new or revised control measures; or
- If the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity; or
- When control measures are no longer necessary or removed; or
- When control measures identified in the SWMP are taken on site that result in a change to the SWMP.

SWMP revisions may include, but are not limited to, potential pollutant source identification, selection of appropriate control measures for site conditions, control measures maintenance procedures, and interim and final stabilization practices. The SWMP changes may include a schedule for further control measures design and implementation, provided that, if any interim control measures are needed to comply with the permit, they are also included in the SWMP and implemented during the interim period.

For SWMP revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the Revision History table at the beginning of this Plan that identifies the date of the site change, the control measures removed or modified, the locations of the control measures, and any changes to the control measures.

POCO shall ensure the site changes are reflected in the SWMP or pursuant to Part I.C.3 of COR400000. POCO understands that it shall be considered non-compliant with the general permit until SWMP revisions have been made.

APPENDIX A
CDPS CERTIFICATION AND
GENERAL PERMIT COR400000



COLORADO

**Department of Public
Health & Environment**

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: COR403522

This Certification to Discharge specifically authorizes:

Owner POCO Holdco, LLC
Operator POCO Holdco, LLC
to discharge stormwater from the facility identified as

POCO - DJ Basin Operations

To the waters of the State of Colorado, including, but not limited to:

Todd Creek, South Platte River

Facility Activity : Oil and Gas Exploration and Well Pad Development

Disturbed Acres: 500 acres

Facility Located at: Yosemite St and 162 Ave Brighton CO 80602
Adams County
Latitude 39.99222 Longitude -104.87349

Specific Information
(if applicable):

Certification is issued and effective: 12/9/2020
Expiration date of general permit: 3/31/2024

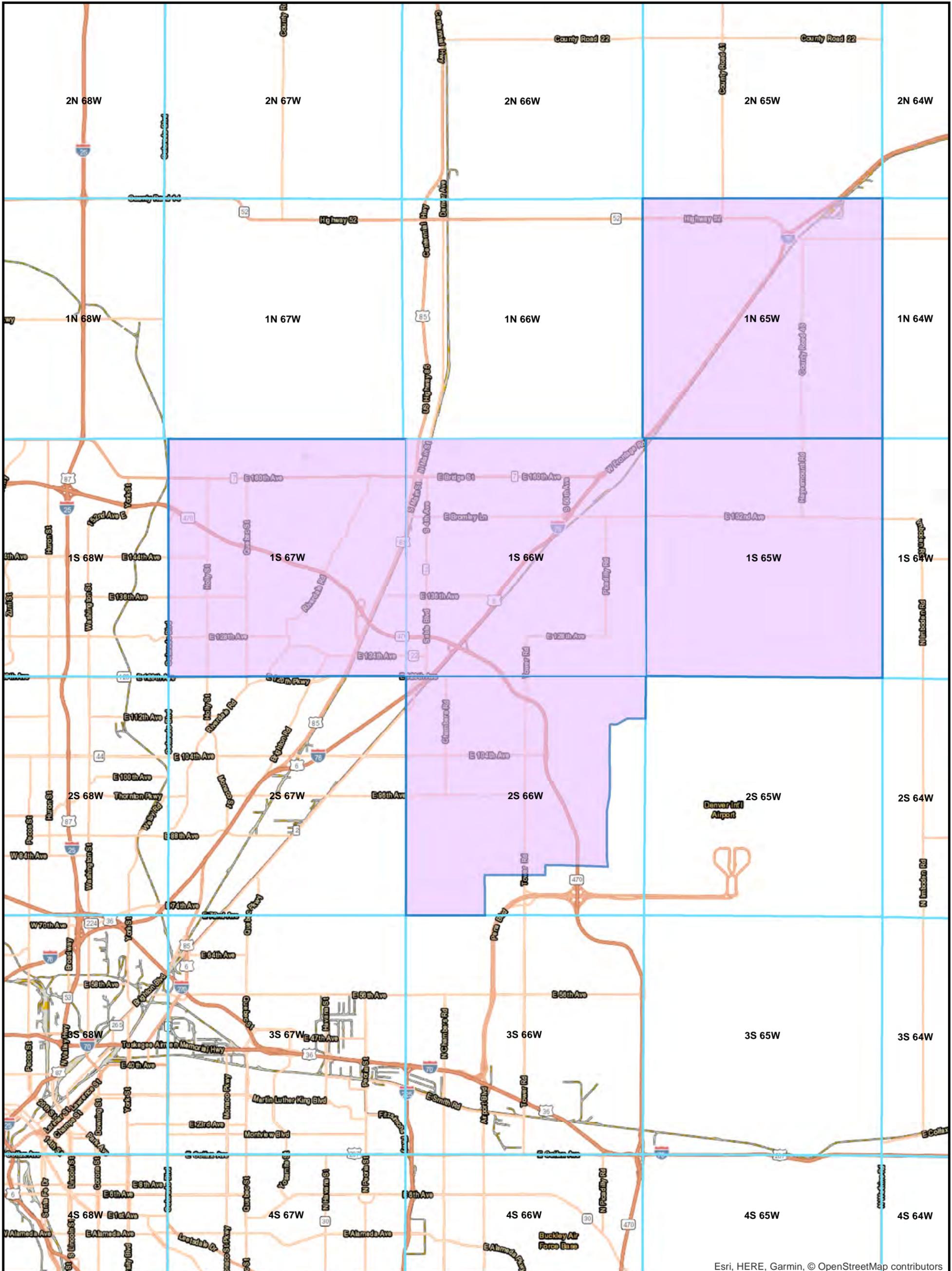
This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Meg Parish, Section Manager
Permits Section
Water Quality Control Division



APPENDIX B

CONSTRUCTION STORMWATER PERMIT OVERVIEW MAP



Esri, HERE, Garmin, © OpenStreetMap contributors

MAP FEATURES

-  Field Area Boundary:
Approx. 146,404 acres
-  COR403522
-  Permit Area to Add



POCO Holdco, LLC

Figure 1: Construction Stormwater Permit
Overview Map

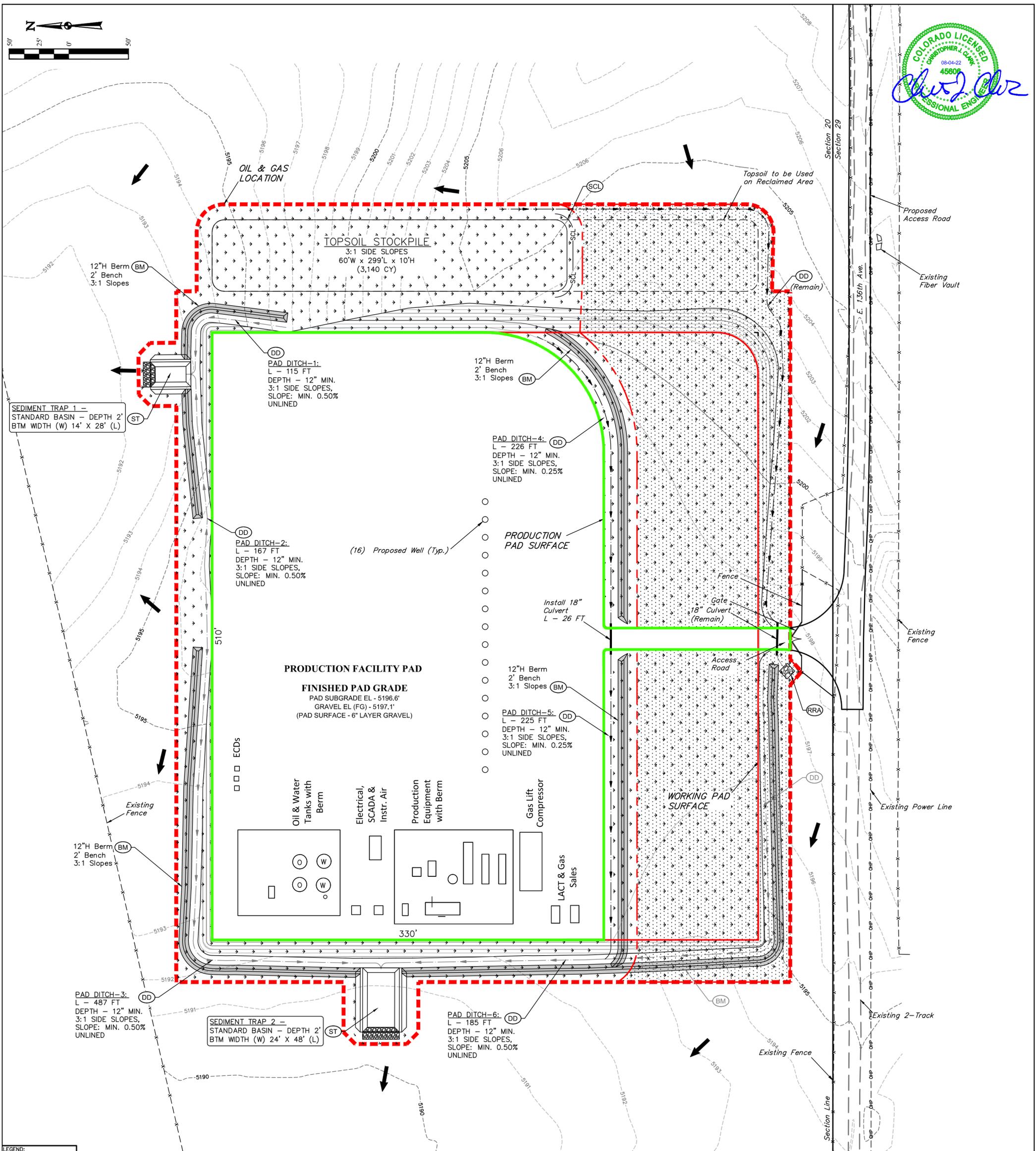
Permit No. COR403522



DRAWN BY: SL (Aquionix)
DATE DRAWN: 09/01/2020
MAP SCALE: 1:185,000
COORD. SYSTEM: WGS_1984_Web_Mercator_Auxiliary_Sphere

APPENDIX C

WAKEMAN 20-17 PLAT



LEGEND:
 [Stippled] Reclaimed Area

APPROXIMATE UN-RECLAIMED ACREAGE = ±5.797 ACRES
 APPROXIMATE RECLAIMED ACREAGE = ±2.010 ACRES
 TOTAL OIL & GAS LOCATION = ±7.807 ACRES

SIZE OF DISTURBED AREA AFTER INTERIM RECLAMATION IN ACRES (COGCC 2A REPORTABLE):
 5.797 ACRES

(DD) DIVERSION DITCH	(BM) BERM	-0000- EXISTING MINOR CONTOUR
(OP) OUTLET PROTECTION	(DD) DIVERSION DITCH TO BE RECLAIMED	-0000- PROPOSED MAJOR CONTOUR
(ST) SEDIMENT TRAP	(ST) SEDIMENT TRAP TO BE RECLAIMED	-0000- PROPOSED MINOR CONTOUR
(SCL) SEDIMENT CONTROL LOG	(BM) BERM TO BE RECLAIMED	[Red Dashed] WORKING PAD SURFACE
(SM) SEEDING AND MULCHING	-x-x-x- EXISTING FENCE	[Red Dashed] OIL & GAS LOCATION
	-0000- EXISTING MAJOR CONTOUR	[Green Dashed] PRODUCTION PAD SURFACE
		[Red Dashed] LIMITS OF PERMANENT DISTURBANCE

NOTES:
 • Contours shown at 1' intervals.
 • Overall working pad surface = 510' x 460'
 • Cut/Fill slopes 3:1 (Typ.).

UETAH
 ENGINEERING & LAND SURVEYING

UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

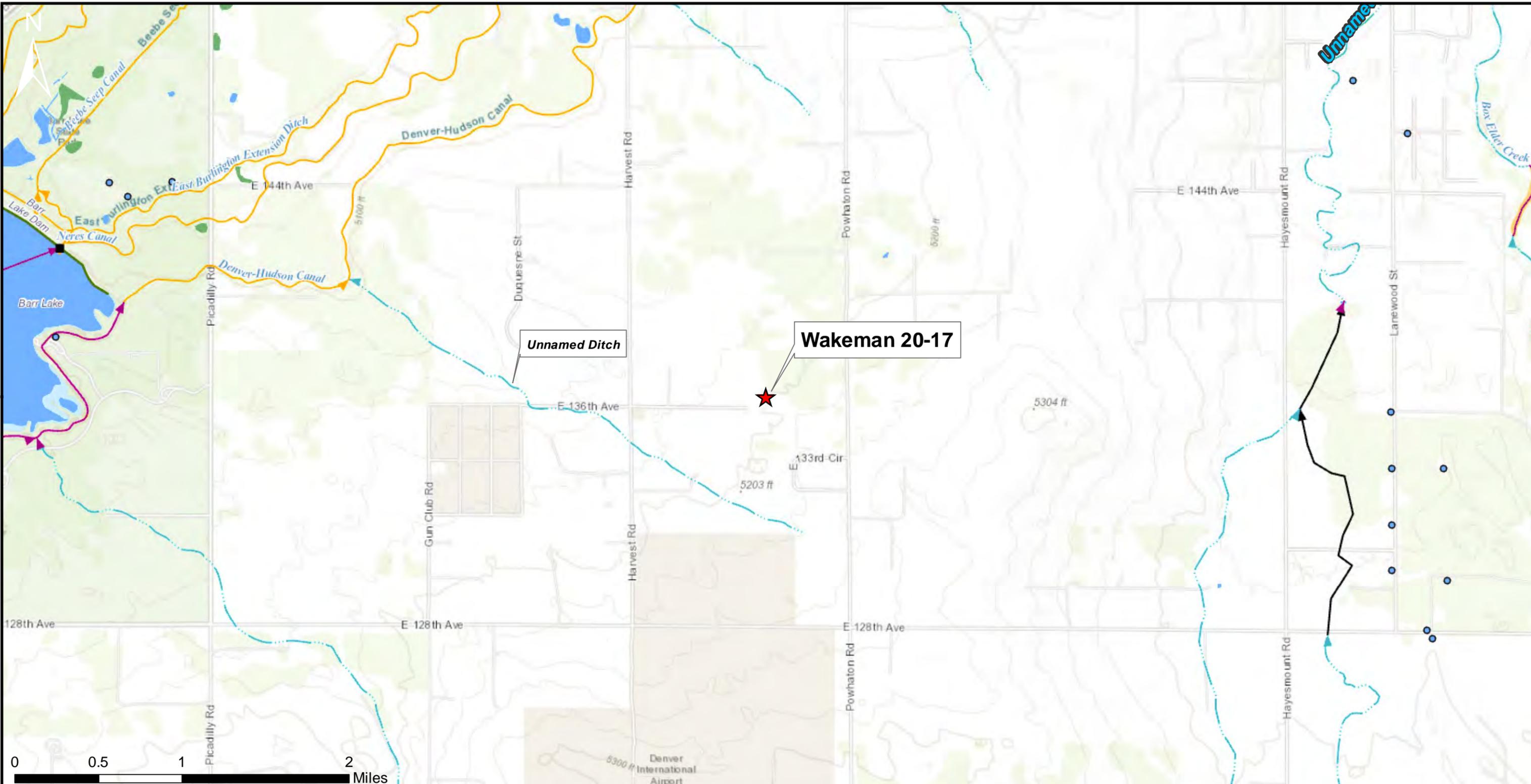
WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

FACILITY LAYOUT

APPENDIX D

WAKEMAN 20-17 CONTROL MEASURE MAP



MAP FEATURES

- Pad Location
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Artificial Path
- Canal / Ditch
- Lake / Pond

MAP NOTES

Wakeman 20-17 Well Pad Coordinates (WGS 1984)
 39.944060 / -104.685530

REVISION	DATE
Initial Release	10/21/22

POCO Operating, LLC.

Wakeman 20-17
Surrounding Waters
Stormwater Management Plan

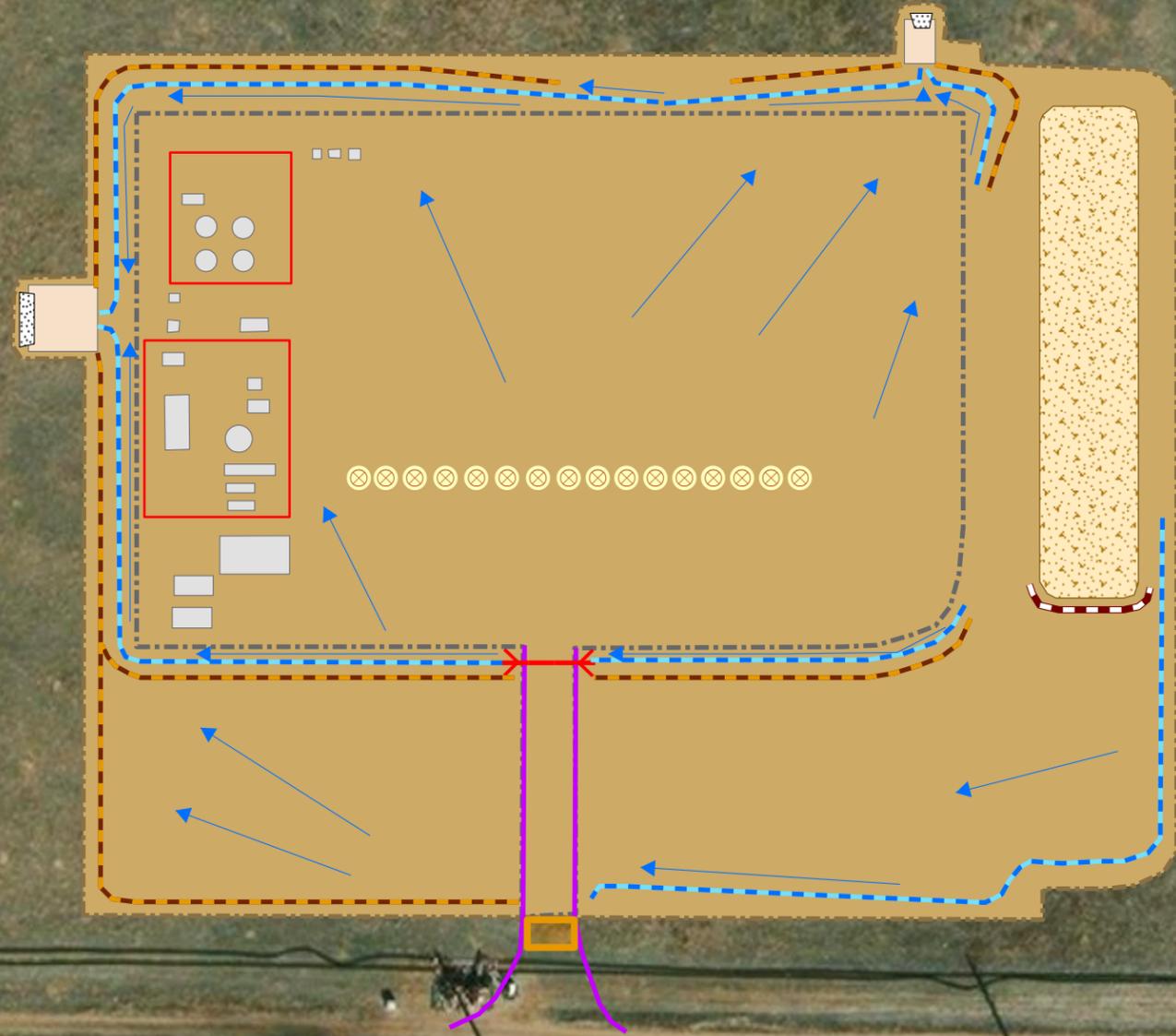
Section 20, Township 1S, Range 65W
Adams County

Aquionix
 EHS Services

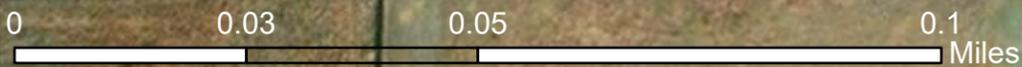
5545 W. 56th Ave Unit E
 Arvada, CO 80002
 (303) 289-7520
 www.aquionix.com

DESIGNED BY: Aquionix
 DATE DRAWN: 10/21/2022
 DRAWN BY: KT

SCALE: 1:35,000
 COORD. SYSTEM: WGS_1984
 _Web_Mercator_Auxiliary_Sphere



E. 136th Street



MAP FEATURES

	Production Pad Surface		Secondary Containment		Sediment Control Log
	Disturbed Area		Rip Rap/Effluent of Sediment Trap		Culvert
	Proposed Production Equipment		Access Road		Surface Flow Direction
	Sediment Trap		Earthen Berm		Well Head Surface Location
	Topsoil Stockpile		Drainage Ditch		Track Pad

MAP NOTES

Wakeman 20-17 Well Pad Coordinates (WGS 1984)
39.944060 / -104.685530

REVISION	DATE
Initial Release	10/21/22
Track Pad Addition	11/14/22

POCO Operating, LLC.

**Wakeman 20-17
Initial Construction
Stormwater Management Plan**

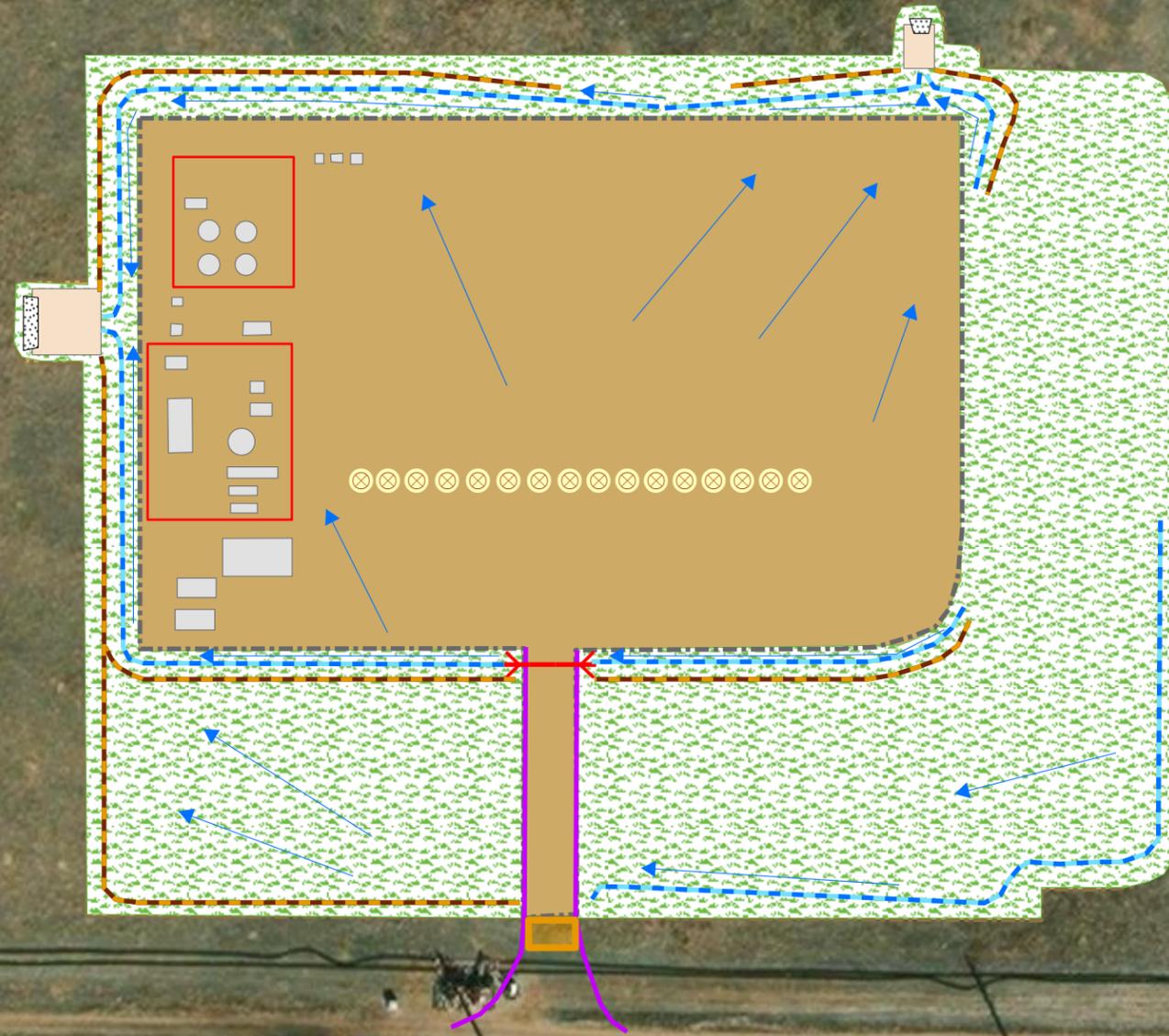
*Section 20, Township 1S, Range 65W
Adams County*

Aquionix
EHS Services

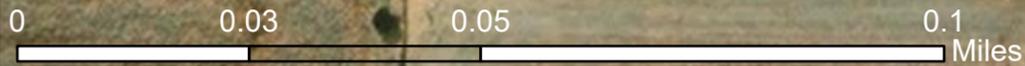
5545 W. 56th Ave Unit E
Arvada, CO 80002
(303) 289-7520
www.aquionix.com

DESIGNED BY: Aquionix
DATE DRAWN: 10/21/2022
DRAWN BY: KT

SCALE: 1:1,250
COORD. SYSTEM: WGS_1984
_Web_Mercator_Auxiliary_Sphere



E. 136th Street



MAP FEATURES

	Production Pad Surface		Secondary Containment		Diversion Ditch
	Disturbed Area		Rip Rap/Effluent of Sediment Trap		Well Head Surface Location
	Proposed Production Equipment		Access Road		Track Pad
	Sediment Trap		Culvert		Surface Flow Direction
	Hydroseed		Earthen Berm		

MAP NOTES

Wakeman 20-17 Well Pad Coordinates (WGS 1984)
39.944060 / -104.685530

REVISION	DATE
Initial Release	10/21/22
Track Pad Addition	11/14/22

POCO Operating, LLC.

**Wakeman 20-17
Interim Reclamation
Stormwater Management Plan**

Section 20, Township 1S, Range 65W
Adams County

Aquionix
EHS Services
5545 W. 56th Ave Unit E
Arvada, CO 80002
(303) 289-7520
www.aquionix.com

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_Web_Mercator_Auxiliary_Sphere

APPENDIX E

ROUTINE STORMWATER INSPECTION FORM

Items			
Item	Result	Action Item	Comments
Inspector Name:			
Inspector Title:			
Qualified Stormwater Manager?			
Weather:			
Inspection Frequency:			
Phase of Construction:			
Estimated acreage of disturbance:			
Are there any new potential pollutant sources?			
Are there any location(s) of discharges of sediment or other pollutants from the site?			
Is there evidence of, or potential for, pollutants to leave the site boundaries, entering the drainage system or discharging to state waters at the following locations: <ul style="list-style-type: none"> Construction Site Perimeter All disurbed areas Design haul roads Material and waste storage areas exposed to precipitation Locations where stormwater has the potential to discharge offsite Locations where vehicles exit the site 			
Are there any BMPs that need to be maintained to to reamin in effective operational condition or modified to miznimze pollutant discharges?			
Are there any BMPs that failed to operate as designed or proved inadequate for a particular location?			
Are any BMPs needed that were not in place at the time of inspection?			
Are there any deviations from the minimum inspection schedule? *Assumed minimum inspection frequency of once every 7 days.			
Stormwater Reporting Requirements			
The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.			
Has there been an incident of noncompliance requiring 24-hour notification?			

General Questions/Comments	
Completion Time:	

Deficiencies and Action Items						
Item (Car #)	Comment / Deficiency	Inspection Report - Follow-up Action Needed?	Date Closed	Verification (Date/Initials)	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification
None						

Notes/Comments

Certification

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for known violations.

Authorized Signature	Date

BEST MANAGEMENT PRACTICES

- A diversion ditches will run along most of the wellpad, minus the east side to divert water away from the wellpad into two separate sediment traps, one at the northeast end of the pad and one at the west side of the pad.
- Earthen berms will be placed on the northern, southern and western portions side of the wellpad.
- One (1) culvert will be placed at the entrance to the wellpad from the access road.
- A Rip-rap apron will be placed at the culvert to slow/filter any stormwater runoff from the road itself.
- Sediment control logs will be placed around the topsoil stockpile.
- Secondary containment will be placed under the production facilities.
-

SURFACE DAMAGE AND RELEASE AGREEMENT

This Surface Damage and Release Agreement ("**Agreement**") is made and entered into this 1st day of August, 2017, by and between **Katherine Wakeman**, 13721 Powhaton Road, Brighton CO 80603 ("**Owner**"), and **PetroShare Corp.** 9635 Maroon Circle, Suite 400, Englewood CO 80112 ("**Operator**"); sometimes referred to each as a "**Party**," or collectively as the "**Parties**."

WITNESSETH:

For and in consideration of the covenants and agreements contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. **OWNERSHIP.** Owner is the surface owner of certain lands located in Adams County, Colorado as more specifically described as follows ("**Lands**");

Township 1 South, Range 65 West, 6th P.M.
Section 20: SW/4SE/4
(Wakeman 17-20-1XYH)

Operator owns a working or operating interest in a valid oil and gas lease or leases covering all or portions of the Lands or lands pooled or included in a spacing unit therewith (each a "**Lease**," collectively, the "**Leases**").

2. **OPERATOR'S OIL AND GAS OPERATIONS ON THE LANDS.** Operator may drill or cause to be drilled as many as 16 oil and/or gas wells on the Lands ("**Wells**"). In order for Operator to drill, including directional and horizontal drilling to access subsurface locations outside the boundaries of the surface area described herein in the instance of restricted surface access, construct, complete, stimulate, re-stimulate, re-complete, rework, re-entry, deepen, produce, maintain, operate, plug and abandon the Wells and all facilities associated therewith, including, but not limited to, access roads ("**Access Roads**"), pipelines, flow lines, separators, tank batteries, electric lines and any other facilities or property necessary for Operator to conduct operations on the Wells (each a "**Facility**," collectively, the "**Facilities**"), it is necessary that Operator enter and utilize as an easement a portion of the surface of the Lands. The Parties enter into this Agreement to evidence their entire agreement regarding the payment of surface damages, entry, surface use, and any other matters relating to Operator's use of the Lands.

3. **LOCATION.** The approximate location of the Wells, the Access Roads to the Well site and certain other Facilities to be constructed on the Lands will be illustrated on a survey plat which will be delivered to Owner prior to or concurrently with Operator's submission to the Colorado Oil and Gas Conservation Commission ("**COGCC**") of applications for drilling permits. Any material changes to such locations may be made by Operator with the consent of Owner, which will not be unreasonably withheld, but will not unduly interfere with Owner's existing use of the surface estate. Operator agrees not to use any more of the surface of the Lands than is reasonably necessary to conduct its operations.

4. **CONDUCT OF OPERATIONS.** Operator's operations on the Lands will be conducted pursuant to the terms of the Leases, this Agreement, and the rules and regulations of the COGCC.

5. **COMPENSATION AMOUNT.**

A. Prior to entry Operator will pay Owner the sum of [REDACTED] per Well location and the associated Facilities ("**Amount**"). The Amount is hereby acknowledged by Owner as full and final consideration for Operator's use of the Lands for the purposes enumerated in this Agreement and for any and all damages caused or created by reason of the reasonable and customary ingress, egress, rights-of-way, drilling, completion, recompletion, reworking, re-entry, production and maintenance operations associated with the Wells and Facilities. Such damages will include, without limitation, damage to growing crops, cropland, the removal, transportation and care of livestock, re-seeding, construction and use of Access Roads and the preparation and use of the Well site areas and construction, installation and maintenance of production equipment and facilities such as flowlines, gas pipelines, separators, tank batteries and other equipment or facilities necessary or convenient for the production, transportation and sale of oil and/or gas therefrom.

B. Operator will pay Owner a sum of [REDACTED] per rod for the right to construct new roads on the Lands and [REDACTED] per rod to use existing roads on the Lands. Access by Operator will be limited to this space and the route of such roads will be agreed to by both Operator and Owner.

6. **ADDITIONAL SURFACE USE PROVISIONS,
ACCESS ROADS, FENCES AND FACILITIES.**

With respect to its operations on the Lands, Operator will comply with the following provisions:

A. Access Roads:

- (i) Access Roads will not exceed 30 feet in traveling road surface width.
- (ii) Operator will take reasonable steps to ensure that all of its vehicles accessing the Lands on its behalf remain on the Access Roads.
- (iii) Operator agrees to back-slope all Access Roads.
- (iv) Operator will provide Owner with a minimum of 10 days prior written notice before restoring the surface of all Access Roads to be permanently abandoned by Operator. No later than 10 days following receipt of such notice, Owner may elect, in writing, not to have such Access Roads abandoned by Operator. In such event, Operator will have no liability under this Agreement, the Lease, or otherwise, to restore the surface of the Lands utilized as Access Roads. Failure to timely respond will be deemed as Owner's election that Operator proceed with the abandonment of the Access Roads and the restoration of the surface thereof.
- (v) Operator will stockpile and save any topsoil removed while constructing Access Roads for rehabilitation or re-seeding as reasonably directed by Owner.
- (vi) Operator will maintain all Access Roads in good repair and condition.

B. Surface Restoration:

No later than two years following permanent cessation of Operator's operations on the Lands or any portion thereof, all areas occupied or utilized by Operator will be restored by Operator to their original contour as nearly as is reasonably practicable, and re-seeded if so requested by Owner, all in accordance with the rules and regulations of the Colorado Oil and Gas Conservation Commission (COGCC) unless a variance therefrom is granted by the COGCC upon the request of Owner; provided however, that Operator's intent to abandon any Access Roads will be subject to the provisions of Paragraph 6(A)(iv) herein.

C. Other.

- (i) Operator will install culverts on the Lands that may be necessary to maintain present drainage and irrigation otherwise affected by its operations on the Lands. Operator shall fence the area utilized for its operations.
- (ii) If by reason of the activities of the Operator, including, but not limited to, drilling, completing, equipping, and operating of the Wells, there is unanticipated damage to personal property of the Owner, including, but not limited to, irrigation wells, fences, culverts, bridges, pipelines, ditches, or irrigation systems, Operator will repair or replace such items after consultation with and to the reasonable satisfaction of the Owner. Owner will notify Operator of any items damaged after the Well's construction and Operator will repair or replace such items after consultation with the Owner within 15 days of occurrence.
- (iii) Operator agrees that all trash, refuse pipe, equipment, liquids, chemicals, or other materials brought on the Lands that are not necessary for continued operations of the Wells will be removed and disposed away from the Lands no later than 90 days after the completion of the Wells. No such items will be burned or buried on the Lands.
- (iv) Operator shall not permit any of its employees or contractors operating hereunder to bring any dog, firearm, explosive device, weapon, alcoholic beverage, or illegal drugs on Owner's property. No employee or contractor of Operator shall hunt, prospect for antlers, fossils or antiquities, recreate, consume alcoholic beverages, or carry on any illegal activities on the Lands. In the event Owner discovers any employee, contractor or representative of Operator failing to abide by the terms of this paragraph, Owner shall provide Operator with as much information as possible regarding any individual violating this provision and Operator agrees to take appropriate action regarding such violation.

(v) Owner has requested that all consultation be conducted directly with Owner. Accordingly, Owner shall have the responsibility of notifying any affected tenant, lessee or other party who may own or have an interest in any crops or surface improvements which could be affected by operations of Operator. Owner agrees that all damages claimed by a surface tenant, lessee or other such party resulting from operations of Operator shall be settled by Owner, and Owner hereby agrees to indemnify and hold Operator harmless from and against any such claims.

(vi) Operator will provide Owner with ten (10) days notice by mail, phone call or personal visit prior to commencing operations on the Lands with heavy equipment. Owner acknowledges that this notice complies with, or hereby waives, all COGCC requirements that it be given advance notice by Operator of its operations. Owner acknowledges receiving from Operator a brochure prepared by the COGCC which describes the rights and responsibilities of Owner as the surface owner of the Lands.

(vii) Owner expressly waives the application of any COGCC setbacks inconsistent with this Agreement, including, but not limited to, setbacks for high density areas and surface lot lines. Owner hereby waives any right to appeal COGCC issuance of drilling permits, including COGCC conditions of approval of Operator's applications for such permits.

(viii) Owner hereby does not consent to the conduct of wildlife surveys on the Lands, and to the imposition of timing restrictions, buffer zones or other conditions of approval, stipulations, or standard operating practices related to wildlife protection and habitat preservation by the COGCC with respect to the Well(s).

7. **DEFAULT AND RIGHT TO CURE.** In the event that either Operator or Owner defaults under this Agreement, the defaulting party shall be notified in writing of the facts relied upon as constituting a breach thereof, and that party, if in default, shall within sixty (60) days after receipt of such notice, commence the compliance with the obligations imposed by virtue of this agreement. In the event the defaulting party does not commence compliance with the obligations imposed by virtue of this agreement within said sixty (60) day period, the non-defaulting party shall have the right to take such action as will cure the default and invoice the defaulting party for the reasonable costs incurred in curing the default, and/or may require specific performance of the defaulting party's obligations under this agreement. The defaulting party agrees to pay any and all reasonable attorney's fees of the other party incurred as a result of a breach of this agreement.

Except as otherwise agreed in writing, no waiver by Owner or Operator of any breach by the other Party of any of its obligations, agreements, or covenants hereunder will be deemed to be a waiver of any subsequent or continuing breach of the same, nor will any forbearance by Owner or Operator to seek a remedy for any breach by the other Party be deemed to be a waiver by Owner or Operator of its rights or remedies with respect to such breach; however, in no event will Operator be liable for additional payment for reasonably anticipated damages to the Lands caused by Operator's oil and gas operations, and in no event will Operator be liable for consequential damages.

8. **INDEMNITY/RELEASE.**

Operator agrees to indemnify and hold Owner harmless from any and all claims, damages and causes of action arising out of and caused by Operator's operations on the Lands that may be asserted by any of Operator's agents, employees, subcontractors, contractors or persons entering upon the Lands at the request of Operator.

A. Except as provided in paragraph 6.C.(ii) above for cases of unanticipated damage to personal property of the Owner, Owner, for itself and its successors and assigns, does hereby, in consideration of the Amount, release, relinquish and discharge Operator, its affiliates, successors and assigns from all claims, demands, damages and causes of action that Owner may have by reason of the drilling of the Well(s) and all other damage or injury to the Lands caused by the drilling, completion, recompletion, reworking, re-entry, production, operation and maintenance of the Well(s), and Owner accepts the Amount as full compensation therefor.

9. **NOTICE FOR ADDITIONAL OPERATIONS.** Operator will comply with COGCC rules and regulations requiring that advance notice be provided to Owner for subsequent operations on the Wells, including, but not limited to, reworking operations thereto.

10. **NOTICES.** Notice by either Party will be promptly given, orally if possible (with the exception of the default notice described in Paragraph 7), with subsequent written confirmation sent by United States mail, postage prepaid and addressed to either Party at the address as designated below; or to such other place as either Party may from time to time designate by notice to the other:

Owners

Katherine Wakeman
13721 Powhaton Road
Brighton CO 80603
Phone: (303) 520-1217

Operator

PetroShare Corp.
Attention: Bill Givan
9635 Maroon Circle, Suite 400
Englewood, CO 80112
Phone: (303) 500-1160
Fax: (303) 770-6885

11. **BINDING EFFECT.** The covenants and conditions herein contained and all of the provisions of this Agreement will inure to the benefit of and will be binding upon the Parties hereto, their respective heirs, representatives, successors or assigns. Owner agrees to contact any and all tenants of Lands or any other third parties utilizing the surface of the Lands that may be affected by Operator's activities on the Lands. It will be Owner's sole responsibility to advise such third parties of the existence of this Agreement and Operator's right to utilize the surface of the Lands pursuant to this Agreement for the payment of any consideration, if any, due such third party from Owner.

12. **CONFIDENTIALITY.** The Parties agree to keep the terms and conditions of this Agreement confidential and will not disclose such matters to any third party without the advance written consent of the other, or if ordered to do so in a legal proceeding. While the specific terms hereof are to remain confidential between the Parties, the Parties shall execute a Memorandum of Surface Damage and Release Agreement that Operator shall place of record in Adams County, Colorado.

13. **ENTIRE AGREEMENT.** This instrument contains the entire agreement between the Parties and may not be modified orally or in any other manner other than by agreement in writing signed by all Parties or their respective successors or assigns.

14. **TERM.** This Agreement will remain in full force and effect for so long as Operator has the right to conduct oil and gas operations on the Lands pursuant to the Leases; provided, however, that the termination of this Agreement will not relieve the Parties from their respective obligations or liabilities arising herein prior to such termination. Also provided that Operator shall commence drilling of all wells within two (2) years of issuance, by the regulatory authority having jurisdiction, of a permit to drill.

15. **COUNTERPARTS.** This Agreement may be executed by facsimile, in counterparts, each of which will be considered an original and enforceable against either Party.

16. **GOVERNING LAW AND VENUE.** This Agreement will be governed by, construed and enforced in accordance with the laws of the State of Colorado. In construing this Agreement, no consideration shall be given to the fact or presumption that one party has had a greater or lesser hand in drafting this Agreement than the other party.

17. **SUCCESSORS.** This Agreement constitutes a covenant running with the Lands and will be binding upon and inure to the benefit of, and be enforceable by, the Parties and their respective successors, administrators, trustees, executors and assigns.

18. **AUTHORITY OF SIGNATORIES.** The signatories below declare, warrant and represent that they have the authority to enter into this Agreement on behalf of their respective principals, if any.

19. **ATTORNEY'S FEES AND COSTS.** The Parties agree that the prevailing Party in any action resulting from a substantial breach of this Agreement will be entitled to its reasonable attorney's fees and costs incurred therein.

IN WITNESS WHEREOF, the Parties hereby execute as herein dated, but effective, the day and year first written above.

PETROSHARE CORP.

By: 
William R. Givan
Vice President Land
Dated: 09/25/17

Owner:

By: 
Name: Katherine Wakeman, Dated: _____

ACKNOWLEDGEMENT

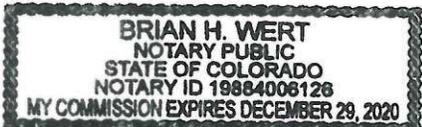
STATE OF COLORADO §
 §
COUNTY OF ADAMS §

mw

The foregoing instrument was acknowledged before me this 22 day of Sept., 2017, by **Katherine Wakeman**, known to me, and who acknowledged that he/she/they executed the foregoing instrument as his /her/their free and voluntary act and deed for the uses and purposes therein set forth.

Witness my hand and official seal.

My Commission Expires:



Brian H. Wert

(seal)

Notary Public:

STATE OF COLORADO §
 §
COUNTY OF DOUGLAS §

The foregoing instrument was acknowledged before me this 25th day of September, 2017, by William R. Givan, as Vice President Land of **PETROSHARE CORP.**, a Colorado corporation, on behalf of such corporation.

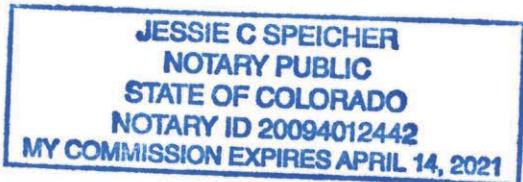
Witness my hand and official seal.

My Commission Expires:

Jessie C. Speicher

Notary Public:

[seal]



**Providence Operating LLC DBA POCO Operating
Wakeman 20-17
Alternative Location Analysis Narrative
Section 20 T1S R65W**

Proposed Expansion to Existing Oil and Gas Location Name: Wakeman 20-17

Well Count: 16

Total Disturbed Area within Project: 7.8 Acres

Size of Location After Interim Reclamation: 5.79 Acres

Surface Owner: Katherine Wakeman

Relevant Local Government: Adams County

Relevant Local Government Zoning: Agriculture

Proximate Local Government: N/A

Description of Potential Impacts to Health, Safety, Welfare, Wildlife and Environment related to the Development of this Oil and Gas Location:

There are 5 (5) Residential Building Units (RBUs) within 2,000’ of the working pad surface of the proposed location, including one RBU that is owned by the Surface Owner.

Potential impacts to health, safety, welfare, and the environment are:

Topic	Description
Noise	During drilling and completion phases, noise may exceed COGCC Noise Limits at the residential building units without mitigation.
Light	Temporary lighting will be supplied by LED towers with lights angled at the pad that will be operated during low-light conditions as needed.
Odor	Odors from typical oil and natural gas development and production emission sources are expected.
Dust	Dust may be generated from vehicles on location.
Truck Traffic	Intermittent noise from vehicular traffic on roads and from heavy equipment during construction, drilling, completions, and production will occur. Traffic will be reduced once wells are in production.

See the following documents for detailed ***mitigation and best management practices plans*** attached to Form 2A as required under Rule 304.c.

- Noise Mitigation Plan
- Lighting Mitigation Plan
- Odor Mitigation Plan
- Dust Mitigation Plan
- Transportation Plan

Description of Advantages and Disadvantages associated with Oil and Gas Location:

Advantages:

1. This location is in rural Adams County.
2. This Location was previously approved by Adams County.
3. This Location is also subject to an executed SUA between the surface owner and operator.
4. The Location is not within High Priority Habitat.
5. The Location is not within the nearby Brighton Public Water Source per COGCC order 1-189.

Disadvantages:

1. Five (5) RBUs within 2,000 feet from the edge of the Working Pad Surface. POCO is working to obtain informed consents from the RBUs.

Permitting Considerations for the Oil and Gas Location:

1. The Location will require a new Adams County OGF Permit.
2. If informed consents are not obtained, a 604.b.(4) hearing will be required.

Tier IV-A or Tier V-A depending on ability to obtaining informed consents.

304.b.(2).B- x Criteria Met									
i	ii	iii	iv	v	vi	vii	viii	ix	x
X									

Conditions or Factors that make the Oil and Gas Location Unavailable:

POCO does not believe there are any conditions or factors that make the subject Oil and Gas Location unavailable for development.

Any Other Considerations for Subject Oil and Gas Location:

POCO maintains that through the use of Best Management Practices and mitigation measures that will be incorporated into the development, this Location will be the least impactful to public health, safety, welfare, wildlife, and environment.

ALTERNATIVE LOCATIONS

There are three other potential oil and gas locations reviewed by POCO as alternatives to the Wakeman 20-17 Location, and the following disadvantages, potential impacts to public health, safety, welfare, wildlife and environment, and/or factors making them unavailable for development are described below.

Alternative Location No. 1:

Legal Description: T1S R65W Section 16 SWSW

Surface Owner: Colorado State Land Board

Relevant Local Government: Adams County

Relevant Local Government Zoning: Agriculture

Proximate Local Government: N/A

Description of Potential Impacts to Health, Safety, Welfare, Wildlife and Environment related to the Development of this Oil and Gas Location:

The same potential sources of short-term and long-term impacts related to noise, light, odor, dust, and truck traffic from the preferred Wakeman 20-17 Location exist with the Alternative Location #1. These potential sources include those listed in the following table:

Topic	Description
Noise	During drilling and completion phases, noise may exceed COGCC Noise Limits at the residential building units without mitigation.
Light	Temporary lighting will be supplied by LED towers with lights angled at the pad that will be operated during low-light conditions as needed.
Odor	Odors from typical oil and natural gas development and production emission sources are expected.
Dust	Dust may be generated from vehicles on location.
Truck Traffic	Intermittent noise from vehicular traffic on roads and from heavy equipment during construction, drilling, completions, and production will occur. Traffic will be reduced once wells are in production.

POCO would utilize Best Management Practices such as temporary sound walls that would minimize noise and light impacts.

Description of Advantages and Disadvantages associated with Oil and Gas Location:

Advantages:

1. There are only 3 RBUs less than 2,000' from the working pad surface compared to the 5 RBUs within 2,000' from the proposed Location.
2. The Location is not within a Disproportionally Impacted Community.
3. The Location is not within High Priority Habitat.
4. POCO already has an existing well in the area that could be used as a Location.

Disadvantages:

1. There is 3 RBU less than 2,000' from the working pad surface.
2. POCO does not have an executed Surface Use Agreement.

3. Only 1-mile laterals would be feasible to reach the full mineral development which would not be as economically efficient.

Permitting Considerations for the Oil and Gas Location:

1. Not additional permitting considerations
2. Tier IV-A or Tier V-A

304.b.(2).B- x Criteria Met									
i	ii	iii	iv	v	vi	vii	viii	ix	x
X									

Conditions or Factors that make the Oil and Gas Location Unavailable:

1. None

Any Other Considerations for Subject Oil and Gas Location:

None

Alternative Location No. 2:

Legal Description: T1S R66W Section 20 SESW

Surface Owner: Donald Sack

Relevant Local Government: Adams County

Relevant Local Government Zoning: Agriculture

Proximate Local Government: N/A

Description of Potential Impacts to Health, Safety, Welfare, Wildlife and Environment related to the Development of this Oil and Gas Location:

Topic	Description
Noise	During drilling and completion phases, noise may exceed COGCC Noise Limits at the residential building units without mitigation.
Light	Temporary lighting will be supplied by LED towers with lights angled at the pad that will be operated during low-light conditions as needed. Residential Building Units may see the additional light.
Odor	Odors from typical oil and natural gas development and production emission sources are expected.
Dust	Dust may be generated from vehicles on location.
Truck Traffic	Intermittent noise from vehicular traffic on roads and from heavy equipment during construction, drilling, completions, and production will occur. Traffic will be reduced once wells are in production.

POCO would utilize Best Management Practices such as temporary sound walls that would minimize noise and light impacts.

Description of Advantages and Disadvantages associated with Oil and Gas Location:

Advantages:

1. The Working Pad Surface would be farther than the preferred Wakeman 20-17 Location to the RBU. However, the RBU is still less than 2,000’.
2. The Location only has 1 RBU less than 2,000’ from the working pad surface.
3. The Location is not within High Priority Habitat.

Disadvantages:

1. There is 1 RBUs less than 2,000’ from the Working Pad Surface.
2. The operator does not have a Surface Use Agreement with the surface owner.
3. The parcel has active agricultural activities on it.

Permitting Considerations for the Oil and Gas Location:

1. Tier IV-A or Tier V-A

304.b.(2).B- x Criteria Met									
i	ii	iii	iv	v	vi	vii	viii	ix	x
x									

Conditions or Factors that make the Oil and Gas Location Unavailable:

None.

Any Other Considerations for Subject Oil and Gas Location:

None

Alternative Location No. 3:

Legal Description: T1S R66W Section 29 SESE

Surface Owner: DS LLC

Relevant Local Government: Adams County

Relevant Local Government Zoning: Agriculture

Proximate Local Government: NA

Description of Potential Impacts to Health, Safety, Welfare, Wildlife and Environment related to the Development of this Oil and Gas Location:

This alternative location is the most impactful to health, safety, welfare, wildlife and Environment as it is closest to a RBU which could result in short term impacts related to noise, light, traffic, odor and dust.

Topic	Description
Noise	During drilling and completion phases, noise may exceed COGCC Noise Limits at the residential building units without mitigation.
Light	Temporary lighting will be supplied by LED towers with lights angled at the pad that will be operated during low-light conditions as needed. Residential Building Units may see the additional light.
Odor	Odors from typical oil and natural gas development and production emission sources are expected.
Dust	Dust may be generated from vehicles on location.
Truck Traffic	Intermittent noise from vehicular traffic on roads and from heavy equipment during construction, drilling, completions, and production will occur. Traffic will be reduced once wells are in production.

POCO would utilize Best Management Practices such as temporary sound walls that would minimize noise and light impacts.

Description of Advantages and Disadvantages associated with Oil and Gas Location:

Advantages:

1. The Location is not located within a Disproportionately Impacted Community.
2. The Location is not within High Priority Habitat.

Disadvantages:

1. There is 1 RBU that is 849' from the working pad surface.
2. POCO does not have an executed Surface Use Agreement.
3. The extended reach from this location required to reach the development area is mechanically challenging and could lead to longer durations of the drilling and completion phases of this development. Two Locations may be required to reach the full mineral development area.
4. The parcel has active agricultural activities on it.

Permitting Considerations for the Oil and Gas Location:

1. Two pads might need to be permitted and constructed to reach the full development.
2. Tier IV-A or Tier V-A

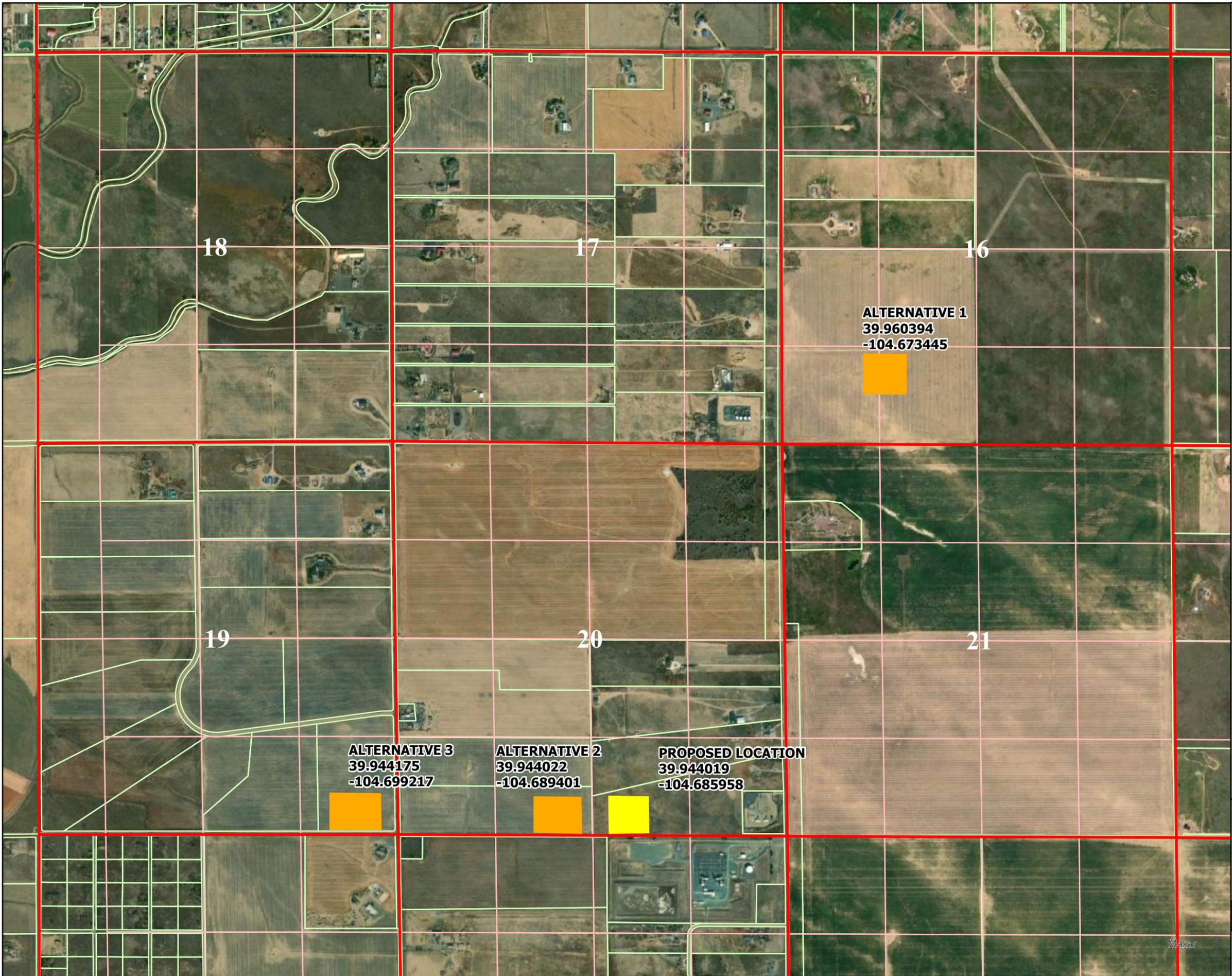
304.b.(2).B- x Criteria Met									
i	ii	iii	iv	v	vi	vii	viii	ix	x
x					x	x			

Conditions or Factors that make the Oil and Gas Location Unavailable:

None

Any Other Considerations for Subject Oil and Gas Location:

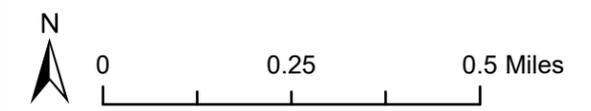
None



Legend

-  Mineral Development Area
-  Proposed Location
-  Alternative Location
-  Parcel Boundary

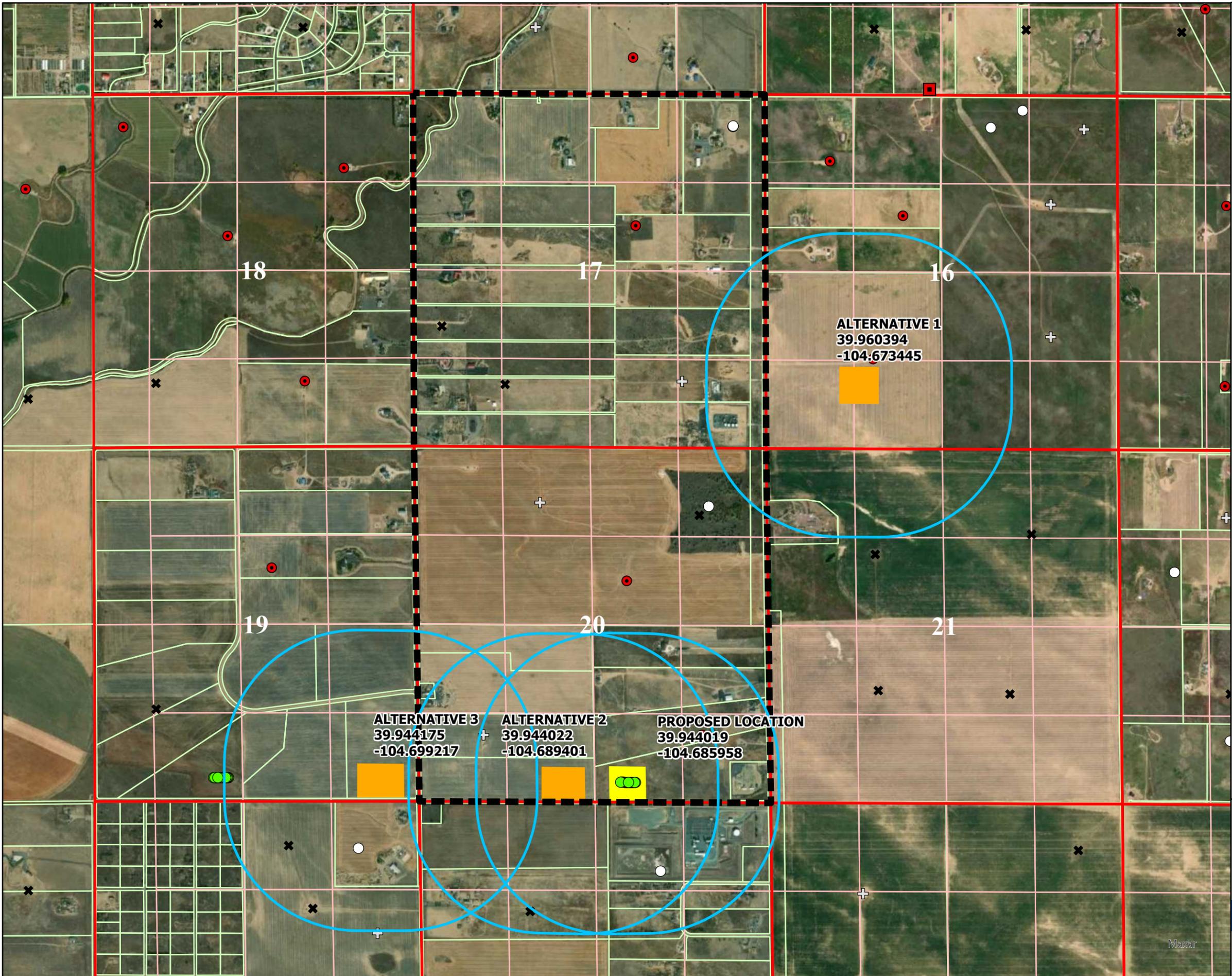
Note: The entire extent of the map is located within Adams County.



WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R65W
 ADAMS COUNTY, CO

ALTERNATIVE LOCATION ANALYSIS RULE 304.b
MAP 1 of 7

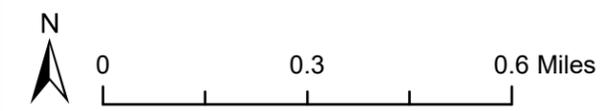
Prepared by: 



Legend

- Mineral Development Area
 - Proposed Location
 - Alternative Location
 - 2,000 Foot Buffer
 - Parcel Boundary
- Well Status**
- Abandoned Location
 - Approved Location
 - Plugged and Abandoned
 - Producing Well
 - Shut In Well

Note: No Disproportionately Impacted Communities were found within the map extent.



ALTERNATIVE 3
39.944175
-104.699217

ALTERNATIVE 2
39.944022
-104.689401

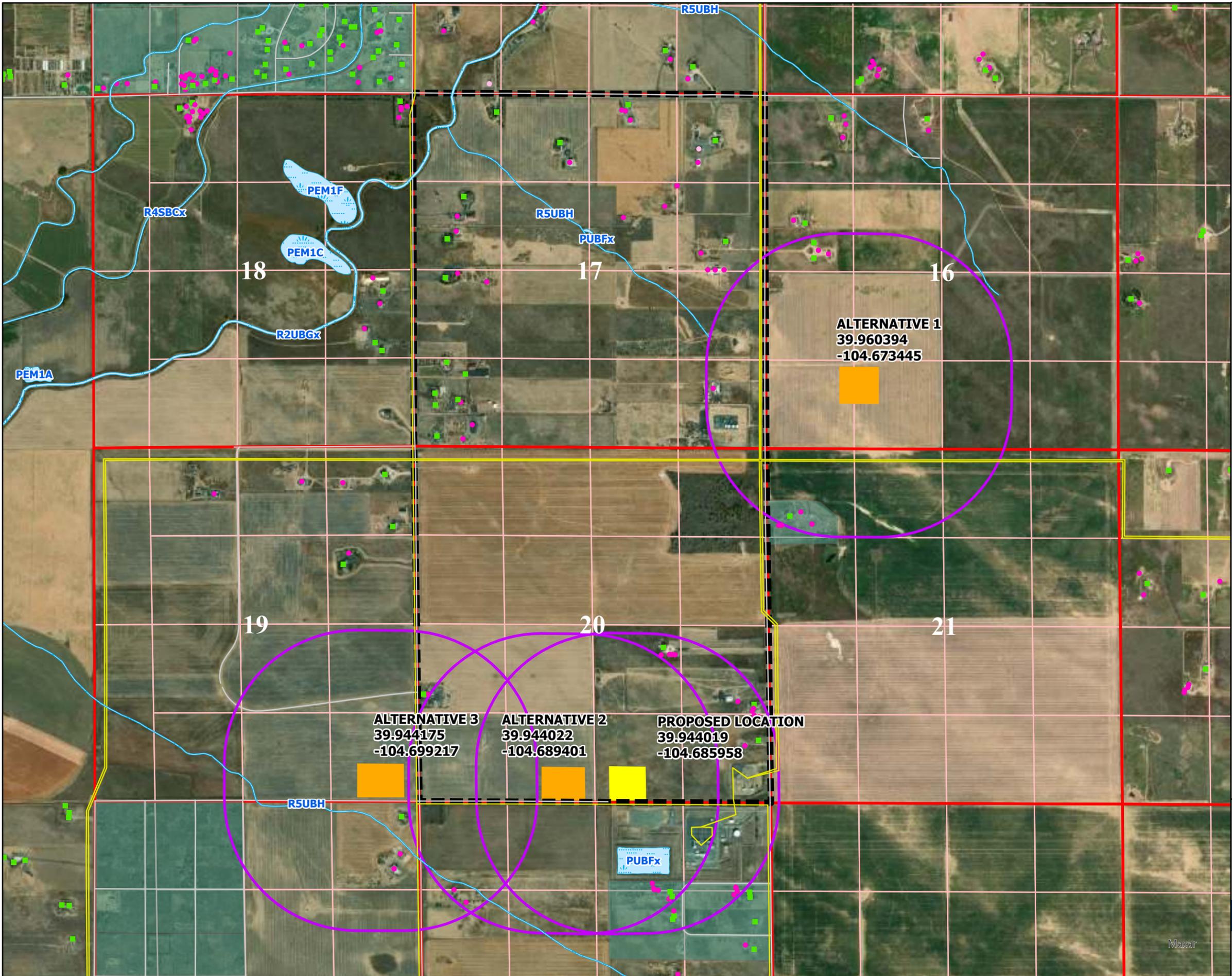
PROPOSED LOCATION
39.944019
-104.685958

ALTERNATIVE 1
39.960394
-104.673445

WAKEMAN PAD
SW 1/4 SE 1/4, SECTION 20, T1S R65W
ADAMS COUNTY, CO

ALTERNATIVE LOCATION ANALYSIS RULE 304.b
MAP 2 of 7

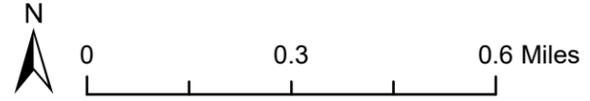
Prepared by:



Legend

-  Mineral Development Area
-  Proposed Location
-  Alternative Location
-  2,000 Foot Buffer
-  Roads
-  Subdivision
-  School Location
-  Licensed Childcare Location
-  Overhead Power Line
-  Commercial Building Unit
-  Mobile Home
-  Out Building
-  Residential Building Unit
-  Wetlands

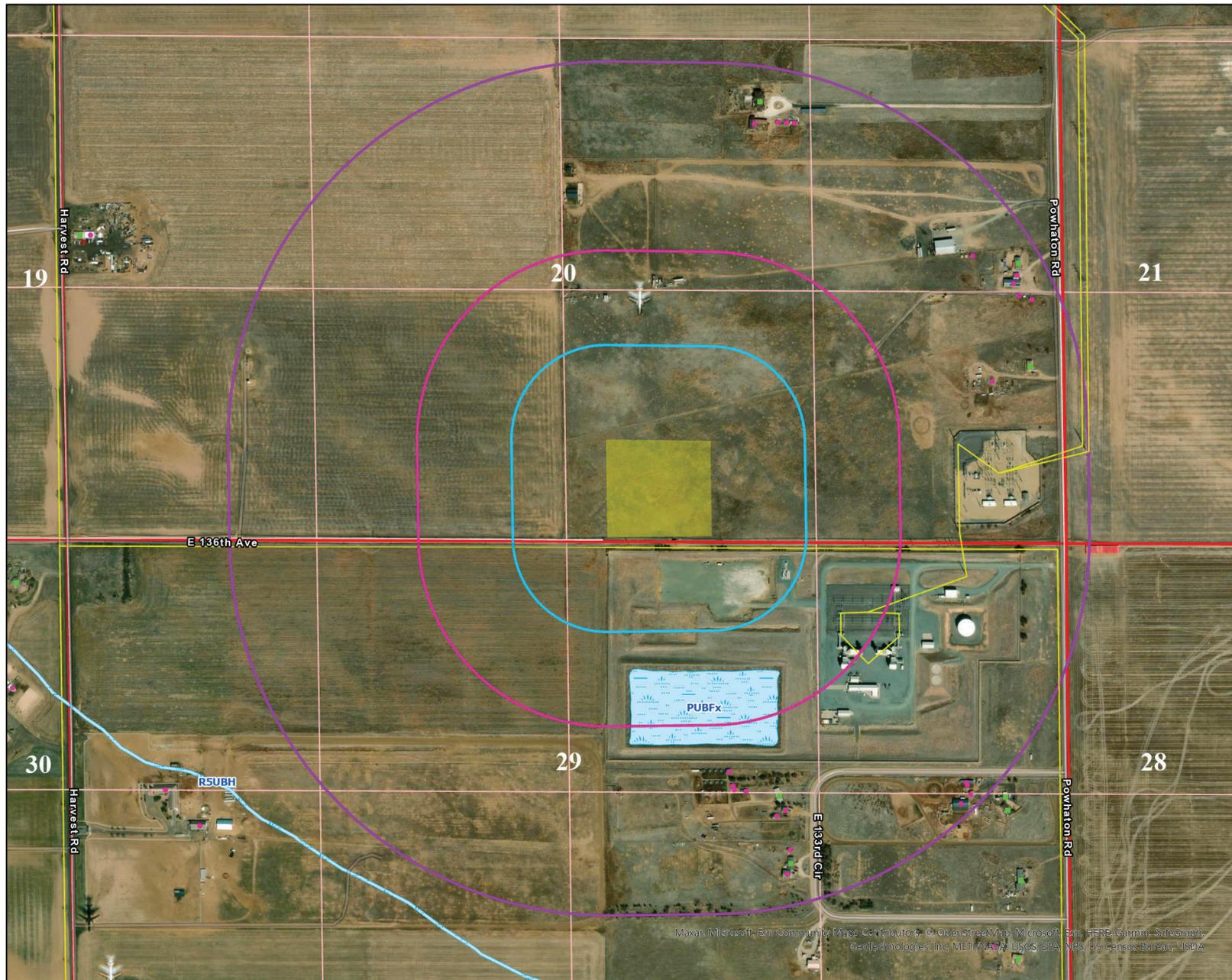
Note: The proposed location and all three alternatives meet ALA criteria 304.b.(2).B.i-- Working pad surface is within 2,000 feet of one or more residential building units or high occupancy building units.



WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R6SW
 ADAMS COUNTY, CO

ALTERNATIVE LOCATION ANALYSIS RULE 304.b
 MAP 3 of 7

Prepared by: 



Legend

- Proposed Location
- 2,000 Foot Buffer
- 1,000 Foot Buffer
- 500 Foot Buffer
- Roads
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	South 1,249'
Residential Building Unit	South 1,421'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (E 136th Ave)	SW 28'
Above Ground Utility	South 58'
Railroad	NW > 5,280'
Property Line	South 23'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	South 711'
Surface Water	South 711'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	0	0	5
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.

N

0 0.1 0.2 Miles

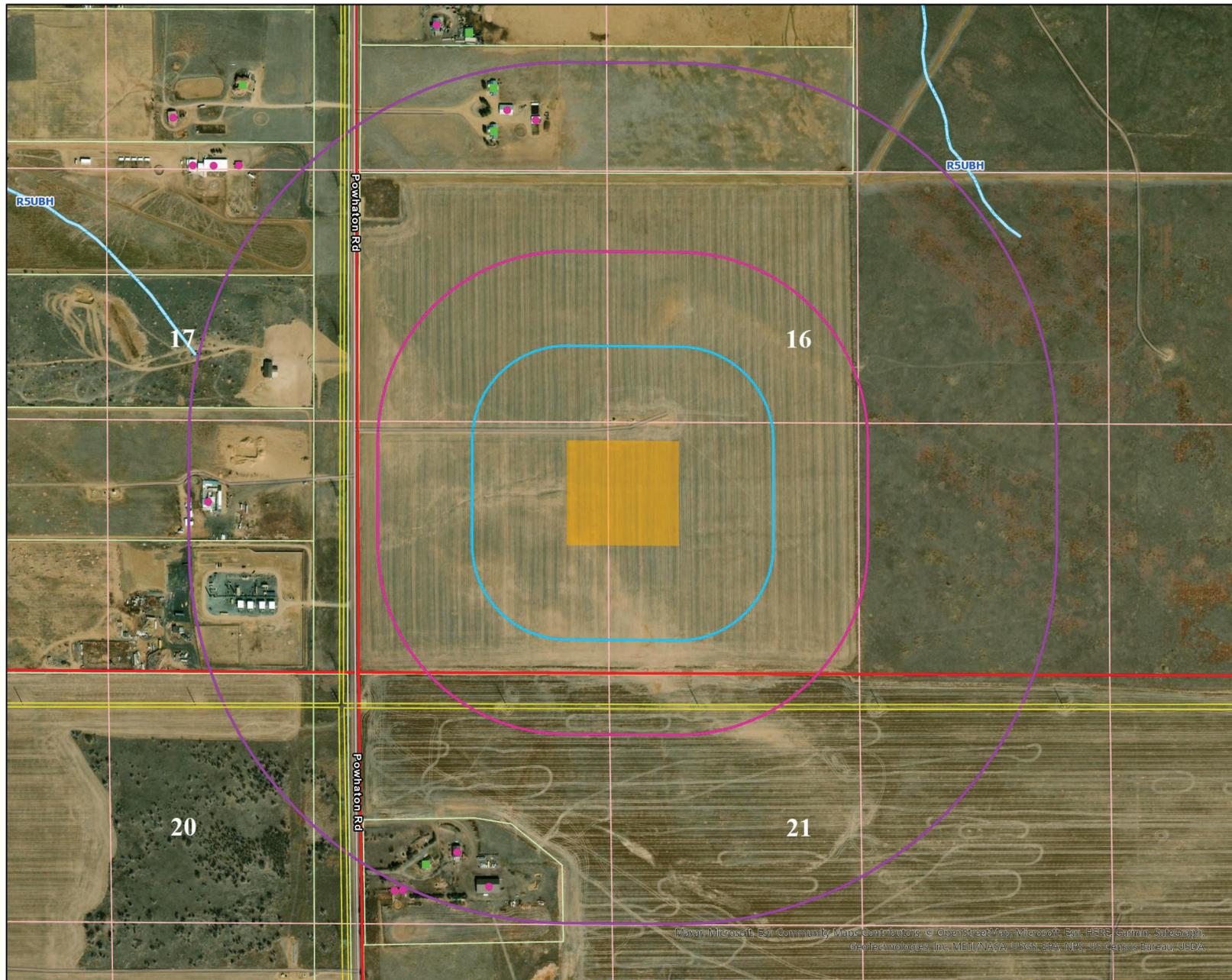


WAKEMAN PAD
SW 1/4 SE 1/4, SECTION 20, T1S R65W
ADAMS COUNTY, CO

**ALTERNATIVE LOCATION ANALYSIS RULE 304.b
PROPOSED LOCATION: MAP 4 of 7**

Prepared by: REDHAWK GIS

Maxar, Microsoft, Esri, Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, Swisstopo, GeoTechnologies, Inc, METI, NASA, USGS, EPA, NPS, US Census Bureau, USDA



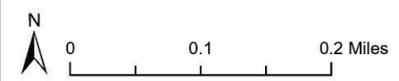
Legend

- Alternative 1 Location
- 500 Foot Buffer
- 1,000 Foot Buffer
- 2,000 Foot Buffer
- Roads
- Parcel Boundary
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	SW 1,725'
Residential Building Unit	SW 1,847'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (Powhatan Rd)	West 1,106'
Above Ground Utility	South 842'
Railroad	NW > 5,280'
Property Line	South 684'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	SW > 5,280'
Surface Water	West 2,000'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

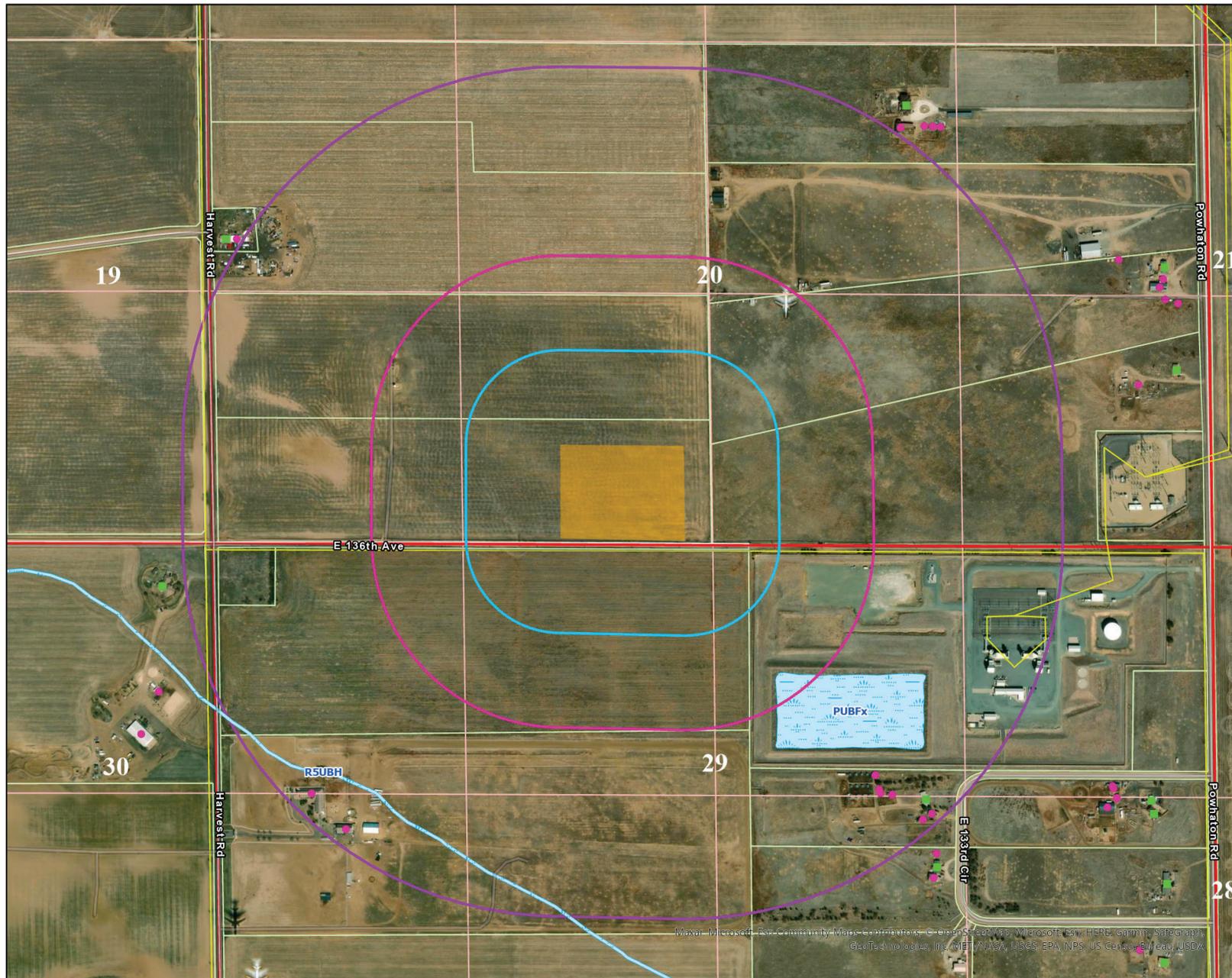
Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	0	0	3
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.




POCO Operating
WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R65W
 ADAMS COUNTY, CO
ALTERNATIVE LOCATION ANALYSIS RULE 304.b
ALTERNATIVE 1: MAP 5 of 7

Prepared by: 



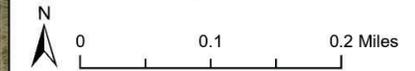
Legend

- Alternative 2 Location
- 500 Foot Buffer Alt2
- 1,000 Foot Buffer Alt 2
- 2,000 Foot Buffer
- Roads
- Parcel Boundary
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	SW 1,870'
Residential Building Unit	SW 1,597'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (E 136th Ave)	South 20'
Above Ground Utility	South 61'
Railroad	NW > 5,280'
Property Line	South 25'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted	
Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	SE 859'
Surface Water	SE 859'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

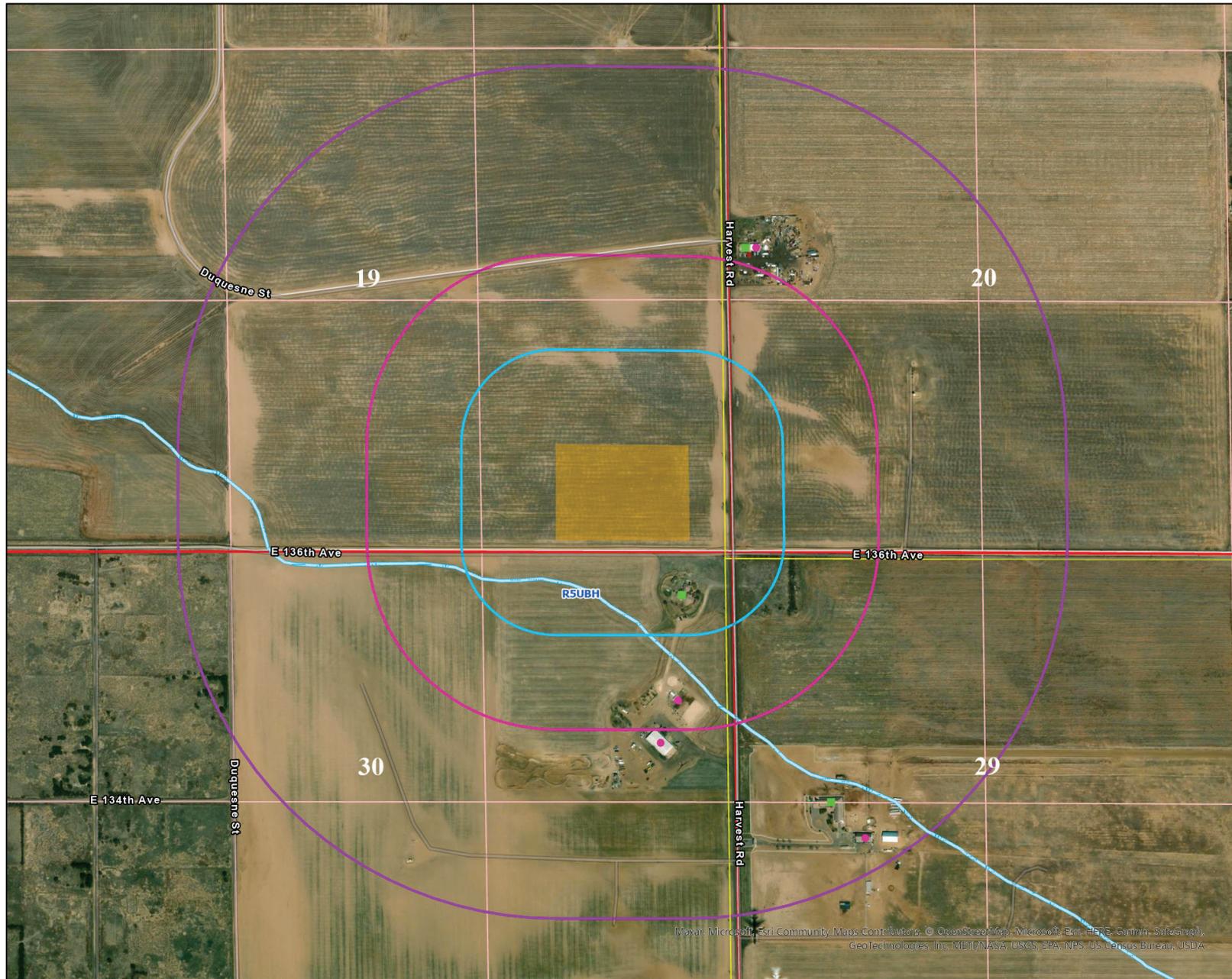
Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	0	0	1
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.




POCO Operating
WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R65W
 ADAMS COUNTY, CO
ALTERNATIVE LOCATION ANALYSIS RULE 304.b
ALTERNATIVE 2: MAP 6 of 7

Prepared by: 



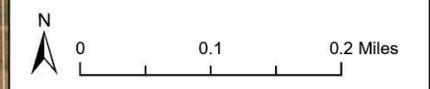
Legend

- Alternative 3 Location
- 500 Foot Buffer Alt 3
- 1,000 Foot Buffer Alt 3
- 2,000 Foot Buffer
- Roads
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	South 292'
Residential Building Unit	South 849'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (E 136th Ave)	South 20'
Above Ground Utility	South 61'
Railroad	NW > 5,280'
Property Line	South 25'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	South 208'
Surface Water	South 208'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	1	0	2
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.




WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R65W
 ADAMS COUNTY, CO

ALTERNATIVE LOCATION ANALYSIS RULE 304.b
ALTERNATIVE 3: MAP 7 of 7

Prepared by: 

This is the Sep 25, 2023 revision of the CDPHE BMPs used for OGDG and CAP consultation for ECMC.

About and BMP Tabs to be filled out by operator and returned to CDPHE Energy Liaison.

If a consultation is requested by ANY party involved in the process (ECMC, CDPHE, or Operator), it will occur with these BMPs as a basis.

- CDPHE generally requires a consultation if any of the following are true of the OGDG/CAP:
- Location is within a Disproportionately Impacted Community (Defined by CO HB23-1233)
 - Location lies within 2,000 ft of a Residential Building Unit
 - Location has an EnviroScreen Score \geq 80.0

What changed from the last revision (Aug 1, 2023)?

Many of the prior BMPs were redundant, and already covered by existing regulatons and permit requirements. Those items which were redundant were removed, and some items were re-ordered for clarity. Usage of this document will enable the ECMC OGLA team and the ECMC Commissioners to gain a clearer picture of the operator's position on individual BMPs through its use, regarding avoidance/mitigation of risks to public health and the environment.

What is planned for the next revision (date TBD)?

CDPHE is planning further revision of this document to align with upcoming rulemakings by AQCC, WQCC, and ECMC.

What if BMPs were already committed to in an existing CAP? Is this still necessary for OGDGs within that CAP?

Yes. Because OGDGs require their own approval through the ECMC, prior committals will need to be restated and revised through this process when required, using the most recent version of the CDPHE BMPs.

Is it possible to commit in a partial fashion to some of these BMPs?

agreed upon edits to the items in this document for final submittal to the ECMC.

Operator:	POCO
Application Name:	Wakeman 20-17
Type (OGDP, CAP, etc.):	OGDP
Location 1	
Pad Name:	Wakeman 20-17
Lat, Long:	39.944067, -104.686334
In a DIC?	No
# RBUs within 2,000'	5
Informed Consent Signed?	1 of 5
EnviroScreen Score	47.99
Location 2	
Pad Name:	
Lat, Long:	
In a DIC?	
# RBUs within 2,000'	
Informed Consent Signed?	
EnviroScreen Score	
Location 3	
Pad Name:	
Lat, Long:	
In a DIC?	
# RBUs within 2,000'	
Informed Consent Signed?	
EnviroScreen Score	
Location 4	
Pad Name:	
Lat, Long:	
In a DIC?	
# RBUs within 2,000'	
Informed Consent Signed?	
EnviroScreen Score	

Operator Contacts to include in CDPHE Final Consultation Letter to ECMC	
Name	Email
Andrea Gross	agross@upstreampm.com
Meghan Grimes	mgrimes@providence-energy.com

#	Category	Sub-Category	BMP Description	Operator Commits? (Yes, No, or N/A)	Notes/Comments
A1	Air	Timing	Operator will appropriately time activities associated with high emissions to reduce the potential for exposure (e.g. if development is occurring near a high occupancy building unit, such as a school, then hydraulic fracturing, flowback or hydrocarbon liquids loadout will only occur when school is not in	N/A	
A2	Air	Equipment	Operator will properly maintain vehicles and equipment	Yes	
A3	Air	Equipment	Operator will use non-emitting pneumatic controllers	Yes	
A4	Air	Electrification	Operator will use electric drilling rigs if available, and will demonstrate best-effort if unable to utilize	No	
A5	Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for	Yes	Await response from Ensign
A6	Air	Electrification	Operator will use electric pumps for hydraulic fracturing if available, and will demonstrate best-effort if unable to utilize them	No	
A7	Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for hydraulic fracturing	Yes	
A8	Air	Electrification	Operator will use electric equipment and devices (e.g. vapor recovery units or VRUs, fans, etc.) to minimize combustion sources on site (if yes, operator will provide a list outlining which equipment and devices will be electrified)	Yes	
A9	Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for nonroad construction equipment	No	
A10	Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for fleets accessing site (service vehicles, sand delivery, haul, produced water, etc.)	No	
A11	Air	Tanks	Operator will not store hydrocarbon liquids in permanent storage tanks on site (other than a maintenance tank possibly used for well unloading or other maintenance activities)	Yes	
A12		Tanks	Operator will not store produced water in permanent storage tanks on site (other than a maintenance tank possibly used for well unloading or other maintenance activities)	No	
A13	Air	Tanks	Operator will implement a "hybrid production flowback method" or "modern production flowback method" (eliminates tanks by routing the oil, natural gas and water directly to permanent production equipment)	No	
A14	Air	Pipelines	Operator will use pipelines to transport water used for hydraulic fracturing to location	Yes	
A15		Pipelines	Operator will use pipelines to transport water used for hydraulic fracturing from location	No	
A16	Air	Pipelines	Operator will have adequate and committed pipeline take away capacity for all produced gas and oil	Yes	
A17	Air	Pipelines	Operator will shut in the facility to reduce the need for flaring if the pipeline is unavailable	Yes	
A18	Air	Pipelines	Operator will incorporate options for recycling produced gas onsite during pipeline downtime, such as: using the gas for gas lift systems, routing it to the facility fuel system, or installing a natural gas liquid (NGL) skid to process the gas onsite	No	
A19	Air	Equipment	Operator will use zero-emission desiccant dehydrators or 98% control of hydrocarbon emissions from glycol dehydrators	N/A	
A20	Air	Equipment	Operator will use compressors equipped with dry seals (if not using centrifugal compressors, select "N/A")	No	
A21	Air	Equipment	Operator will collect emissions from rod packing on reciprocating compressors and rout them through a closed vent system to a process or emissions control device	Yes	
A22	Air	Equipment	Operator will use lease automatic custody transfer (LACT) system to remove/reduce the need for truck loadout	Yes	
A23	Air	Drilling Fluids	Operator will use OGP Group III drilling fluid	Yes	
A24	Air	Drilling Fluids	Operator will use a chiller to cool drilling fluid as it is piped through the recirculation system before routing to the suction tanks (Only applicable if using OGP Group I drilling fluid)	N/A	POCO intends to use Odor Armor to mitigate odor emissions from oil based mud. They will be using a plant-based product. ODOR-ARMOR® is a concentrated, multi-component, blend of natural odor neutralizing compounds. A range of industry specific formulations are available to eliminate nuisance odors in air through atomization and vaporization or they can be injected directly into odorous substrates..
A25	Air	Drilling Fluids	Operator will cover trucks transporting drill cuttings	Yes	
A26	Air	Drilling Fluids	Operator will use a squeegee or other device to remove drilling fluids from pipes as they exit the	Yes	
A27	Air	Drilling Fluids	Operator will ensure that all drilling fluid is removed from pipes before storage	Yes	
A28	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will eliminate use of VOC paints and	Yes	
A29	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will minimize vehicle and engine idling	Yes	
A30	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will reduce truck traffic and worker traffic	Yes	
A31	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will postpone the refueling of vehicles	Yes	
A32	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will suspend or delay the use of fossil fuel powered ancillary equipment	Yes	
A33	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will postpone construction activities	Yes	
A34	Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will reschedule non-essential operational activities such as pigging, well unloading and tank cleaning	Yes	
A35	Air	Ozone	Ozone mitigation on forecasted high ozone days: Operator will postpone flowback if emissions cannot be adequately captured with a vapor recovery unit (VRU)	Yes	

W1	Water	Containment	Operator will use Modular Large Volume Storage Tanks	Yes	
W2	Water	Containment	Secondary containment: Operator will install perimeter controls to control potential sediment-laden runoff in the event of spill or release from Modular Large Volume Storage Tank	Yes	
W3	Water	General	Operator will recycle or beneficially reuse flowback and produced water for use downhole	No	
P1	PFAS	Fluids	Operator will not use fracturing fluids which contain PFAS compounds	Yes	
P2	PFAS	General	Operator will contribute to nearby fire district(s) to support transition away from PFAS-containing foam through funding, buy-back program participation/promotion, etc.	Yes	
P3	PFAS	General	Operator will coordinate with nearby fire district(s) to evaluate whether PFAS-free foam can provide the required performance for the specific hazard	Yes	
P4	PFAS	General	If PFAS-containing foam is used at a location: operator will properly characterize the site to determine the level, nature and extent of contamination	Yes	
P5	PFAS	General	If PFAS-containing foam is used at a location: operator will perform appropriate soil and water sampling to determine whether additional characterization is necessary and inform the need for and extent of interim or permanent remedial actions	Yes	
P6	PFAS	General	If PFAS-containing foam is used at a location: operator will properly capture and dispose of PFAS-contaminated soil and fire and flush water	Yes	

Category	Sub-Category	BMP Description	Commits? (Y, N, or X)	Modified Committal ?	Commitment Text
Air	Timing	Operator will appropriately time activities associated with high emissions to reduce the potential for exposure (e.g. if development is occurring near a high occupancy building unit, such as a school, then hydraulic fracturing, flowback or hydrocarbon liquids loadout will only occur when school is not in session)	X		
Air	Equipment	Operator will properly maintain vehicles and equipment	Y	N	Operator will properly maintain vehicles and equipment
Air	Equipment	Operator will use non-emitting pneumatic controllers	Y	N	Operator will use non-emitting pneumatic controllers
Air	Electrification	Operator will use electric drilling rigs if available, and will demonstrate best-effort if unable to utilize them	N		
Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for drilling	Y	N	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for drilling
Air	Electrification	Operator will use electric pumps for hydraulic fracturing if available, and will demonstrate best-effort if unable to utilize them	N		
Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for hydraulic fracturing	Y	N	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for hydraulic fracturing
Air	Electrification	Operator will use electric equipment and devices (e.g. vapor recovery units or VRUs, fans, etc.) to minimize combustion sources on site (if yes, operator will provide a list outlining which equipment and devices will be electrified)	Y	N	Operator will use electric equipment and devices (e.g. vapor recovery units or VRUs, fans, etc.) to minimize combustion sources on site (if yes, operator will provide a list outlining which equipment and devices will be electrified)
Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for nonroad construction equipment	N		
Air	Engines	Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for fleets accessing site (service vehicles, sand delivery, haul, produced water, etc.)	N		
Air	Tanks	Operator will not store hydrocarbon liquids in permanent storage tanks on site (other than a maintenance tank possibly used for well unloading or other maintenance activities)	Y	Y	Operator will have two permanent hydrocarbon liquids storage tanks on site, and commits to usage of these tanks exclusively during upset conditions or other maintenance activities
	Tanks	Operator will not store produced water in permanent storage tanks on site (other than a maintenance tank possibly used for well unloading or other maintenance activities)	N		
Air	Tanks	Operator will implement a "hybrid production flowback method" or "modern production flowback method" (eliminates tanks by routing the oil, natural gas and water directly to permanent production equipment)	N		
Air	Pipelines	Operator will use pipelines to transport water used for hydraulic fracturing to location	Y	N	Operator will use pipelines to transport water used for hydraulic fracturing to location
	Pipelines	Operator will use pipelines to transport water used for hydraulic fracturing from location	N		
Air	Pipelines	Operator will have adequate and committed pipeline take away capacity for all produced gas and oil	Y	N	Operator will have adequate and committed pipeline take away capacity for all produced gas and oil
Air	Pipelines	Operator will shut in the facility to reduce the need for flaring if the pipeline is unavailable	Y	N	Operator will shut in the facility to reduce the need for flaring if the pipeline is unavailable
Air	Pipelines	Operator will incorporate options for recycling produced gas onsite during pipeline downtime, such as: using the gas for gas lift systems, routing it to the facility fuel system, or installing a natural gas liquid (NGL) skid to process the gas onsite	N		
Air	Equipment	Operator will use zero-emission desiccant dehydrators or 98% control of hydrocarbon emissions from glycol dehydrators	X		
Air	Equipment	Operator will use compressors equipped with dry seals (if not using centrifugal compressors, select "N/A")	N		
Air	Equipment	Operator will collect emissions from rod packing on reciprocating compressors and rout them through a closed vent system to a process or emissions control device	Y	N	Operator will collect emissions from rod packing on reciprocating compressors and rout them through a closed vent system to a process or emissions control device
Air	Equipment	Operator will use lease automatic custody transfer (LACT) system to remove/reduce the need for truck loadout	Y	N	Operator will use lease automatic custody transfer (LACT) system to remove/reduce the need for truck loadout
Air	Drilling Fluids	Operator will use OGP Group III drilling fluid	Y	N	Operator will use OGP Group III drilling fluid
Air	Drilling Fluids	Operator will use a chiller to cool drilling fluid as it is piped through the recirculation system before routing to the suction tanks (Only applicable if using OGP Group I drilling fluid)	X		
Air	Drilling Fluids	Operator will cover trucks transporting drill cuttings	Y	N	Operator will cover trucks transporting drill cuttings
Air	Drilling Fluids	Operator will use a squeegee or other device to remove drilling fluids from pipes as they exit the wellbore	Y	N	Operator will use a squeegee or other device to remove drilling fluids from pipes as they exit the wellbore
Air	Drilling Fluids	Operator will ensure that all drilling fluid is removed from pipes before storage	Y	N	Operator will ensure that all drilling fluid is removed from pipes before storage

Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will eliminate use of VOC paints and solvents	Y	N	Ozone mitigation on forecasted high ozone days: operator will eliminate use of VOC paints and solvents
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will minimize vehicle and engine idling	Y	N	Ozone mitigation on forecasted high ozone days: operator will minimize vehicle and engine idling
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will reduce truck traffic and worker traffic	Y	N	Ozone mitigation on forecasted high ozone days: operator will reduce truck traffic and worker traffic
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will postpone the refueling of vehicles	Y	N	Ozone mitigation on forecasted high ozone days: operator will postpone the refueling of vehicles
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will suspend or delay the use of fossil fuel powered ancillary equipment	Y	N	Ozone mitigation on forecasted high ozone days: operator will suspend or delay the use of fossil fuel powered ancillary equipment
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will postpone construction activities	Y	N	Ozone mitigation on forecasted high ozone days: operator will postpone construction activities
Air	Ozone	Ozone mitigation on forecasted high ozone days: operator will reschedule non-essential operational activities such as pigging, well unloading and tank cleaning	Y	N	Ozone mitigation on forecasted high ozone days: operator will reschedule non-essential operational activities such as pigging, well unloading and tank cleaning
Air	Ozone	Ozone mitigation on forecasted high ozone days: Operator will postpone flowback if emissions cannot be adequately captured with a vapor recovery unit (VRU)	Y	N	Ozone mitigation on forecasted high ozone days: Operator will postpone flowback if emissions cannot be adequately captured with a vapor recovery unit (VRU)
Water	Containment	Operator will use Modular Large Volume Storage Tanks	Y	N	Operator will use Modular Large Volume Storage Tanks
Water	Containment	Secondary containment: Operator will install perimeter controls to control potential sediment-laden runoff in the event of spill or release from Modular Large Volume Storage Tank	Y	N	Secondary containment: Operator will install perimeter controls to control potential sediment-laden runoff in the event of spill or release from Modular Large Volume Storage Tank
Water	General	Operator will recycle or beneficially reuse flowback and produced water for use downhole	N		
PFAS	Fluids	Operator will not use fracturing fluids which contain PFAS compounds	Y	N	Operator will not use fracturing fluids which contain PFAS compounds
PFAS	General	Operator will contribute to nearby fire district(s) to support transition away from PFAS-containing foam through funding, buy-back program participation/promotion, etc.	Y	N	Operator will contribute to nearby fire district(s) to support transition away from PFAS-containing foam through funding, buy-back program participation/promotion, etc.
PFAS	General	Operator will coordinate with nearby fire district(s) to evaluate whether PFAS-free foam can provide the required performance for the specific hazard	Y	N	Operator will coordinate with nearby fire district(s) to evaluate whether PFAS-free foam can provide the required performance for the specific hazard
PFAS	General	If PFAS-containing foam is used at a location: operator will properly characterize the site to determine the level, nature and extent of contamination	Y	N	If PFAS-containing foam is used at a location: operator will properly characterize the site to determine the level, nature and extent of contamination
PFAS	General	If PFAS-containing foam is used at a location: operator will perform appropriate soil and water sampling to determine whether additional characterization is necessary and inform the need for and extent of interim or permanent remedial actions	Y	N	If PFAS-containing foam is used at a location: operator will perform appropriate soil and water sampling to determine whether additional characterization is necessary and inform the need for and extent of interim or permanent remedial actions
PFAS	General	If PFAS-containing foam is used at a location: operator will properly capture and dispose of PFAS-contaminated soil and fire and flush water	Y	N	If PFAS-containing foam is used at a location: operator will properly capture and dispose of PFAS-contaminated soil and fire and flush water

Totals	
Yes	Modified
31	1
No	N/A
10	3

Compiled Commitment Text

- Operator will properly maintain vehicles and equipment
- Operator will use non-emitting pneumatic controllers
- Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for drilling
- Operator will use Tier IV or equivalent engines, such as NG Tier II w/ battery assist, (or better) for hydraulic fracturing
- Operator will use electric equipment and devices (e.g. vapor recovery units or VRUs, fans, etc.) to minimize combustion sources on site (if yes, operator will provide a list outlining which equipment and devices will be electrified)
- Operator will have two permanent hydrocarbon liquids storage tanks on site, and commits to usage of these tanks exclusively during upset conditions or other maintenance activities
- Operator will use pipelines to transport water used for hydraulic fracturing to location
- Operator will have adequate and committed pipeline take away capacity for all produced gas and oil
- Operator will shut in the facility to reduce the need for flaring if the pipeline is unavailable
- Operator will collect emissions from rod packing on reciprocating compressors and rout them through a closed vent system to a process or emissions control device
- Operator will use lease automatic custody transfer (LACT) system to remove/reduce the need for truck loadout
- Operator will use OGP Group III drilling fluid
- Operator will cover trucks transporting drill cuttings
- Operator will use a squeegee or other device to remove drilling fluids from pipes as they exit the wellbore
- Operator will ensure that all drilling fluid is removed from pipes before storage
- Ozone mitigation on forecasted high ozone days: operator will eliminate use of VOC paints and solvents
- Ozone mitigation on forecasted high ozone days: operator will minimize vehicle and engine idling
- Ozone mitigation on forecasted high ozone days: operator will reduce truck traffic and worker traffic
- Ozone mitigation on forecasted high ozone days: operator will postpone the refueling of vehicles
- Ozone mitigation on forecasted high ozone days: operator will suspend or delay the use of fossil fuel powered ancillary equipment
- Ozone mitigation on forecasted high ozone days: operator will postpone construction activities
- Ozone mitigation on forecasted high ozone days: operator will reschedule non-essential operational activities such as pigging, well unloading and tank cleaning
- Ozone mitigation on forecasted high ozone days: Operator will postpone flowback if emissions cannot be adequately captured with a vapor recovery unit (VRU)
- Operator will use Modular Large Volume Storage Tanks
- Secondary containment: Operator will install perimeter controls to control potential sediment-laden runoff in the event of spill or release from Modular Large Volume Storage Tank
- Operator will not use fracturing fluids which contain PFAS compounds
- Operator will contribute to nearby fire district(s) to support transition away from PFAS-containing foam through funding, buy-back program participation/promotion, etc.
- Operator will coordinate with nearby fire district(s) to evaluate whether PFAS-free foam can provide the required performance for the specific hazard
- If PFAS-containing foam is used at a location: operator will properly characterize the site to determine the level, nature and extent of contamination
- If PFAS-containing foam is used at a location: operator will perform appropriate soil and water sampling to determine whether additional characterization is necessary and inform the need for and extent of interim or permanent remedial actions
- If PFAS-containing foam is used at a location: operator will properly capture and dispose of PFAS-contaminated soil and fire and flush water

CUMULATIVE IMPACTS PLAN



POCO Operating

Wakeman 20-17 Pad

Sec. 20 T1S R65W (SWSE)

Adams County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application
and consistent with the requirements of Rule 427.a.

November 2, 2022

Revised: September 8, 2023

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1.0 INTRODUCTION

This Cumulative Impacts Plan has been prepared pursuant to Rule 304.c.(19) of the Colorado Oil and Gas Commission and addresses the following resources:

- Air Resources
- Public Health
- Water Resources
- Terrestrial and Aquatic Wildlife Resources and Ecosystems
- Soil Resources
- Public Welfare

This plan documents how the Operator (POCO) will address cumulative impacts to resources identified pursuant to Rule 303.a.(5) that includes:

- A. A description of all resources for which cumulative adverse impacts are expected (Section 4.0);
- B. A description of specific measures taken to avoid or minimize the extent to which cumulative adverse impacts are increased (Section 5.0);
- C. A description of all measures taken to mitigate or offset cumulative adverse impacts to any of the resources (Section 6.0); and
- D. Additional information determined to be reasonable and necessary to the evaluation of cumulative impacts by the Operator, the Director, CDPHE, CPW, or the Relevant Local Government (Sections 1.0, 2.0, and 3.0).

The Cumulative Impacts Plan for the Providence Energy Operating LLC's ("POCO") Wakeman 20-17 Pad location was prepared based on the information in the Oil and Gas Location Assessment (Form 2A) and Cumulative Impacts Data Identification (Form 2B).

2.0 PROJECT DESCRIPTION

The POCO Wakeman 20-17 Pad includes the drilling, completion, and production of up to 16 wells. The legal description for this Location is SWSE of Section 20, Township 1 South, Range 65 West, 6th P.M., in Adams County, Colorado.

2.1 SURFACE DISTURBANCE

Construction of the proposed location is estimated to have a total disturbance of 7.807 acres. After completion of approximately 2.010 acres of interim reclamation, long-term disturbance would be reduced to an estimated 5.797 acres. Access road will be 2,265' and approximately 1.56 acres and 1.04 acres after final reclamation. Residual disturbance includes acreage that would remain unvegetated for the life of the project, which is estimated to be 35 years. Within six months of operations, site reclamation would be initiated for portions of the well pad not required for the continued operation of the well, weather permitting.

Table 2-1 Estimated Surface Disturbance

Project Feature	Length (miles)	Short-term Disturbance (acres)	Long-term Disturbance (acres)
Well Pad	NA	7.807	5.797
Access Road	0.43	1.56	1.04
Location Total	0.43	9.367	6.837

3.0 CUMULATIVE IMPACT METHODOLOGY

Cumulative impacts may result when impacts associated with project implementation are added to other similar impacts associated with past, present and reasonably foreseeable future actions. The Wakeman 20-17 location is sited in an agricultural area of Adams County, Colorado. Publicly available data sources including county, state, federal, and public domains, were used to characterize the past, present, and reasonably foreseeable development in the vicinity of the proposed project. Based on COGCC data, there are 12 oil and gas locations (16 wells) that are active and built within one mile.

Each resource addressed in this cumulative impacts analysis is assigned a spatial and temporal scale that establishes the extent of the analysis. The spatial component of this analysis is referred to as the “Cumulative Impact Analysis Area (CIAA). The CIAA varies by resource and can be relatively smaller for some resources, as for vegetation, or much larger as in the case for air quality. **Table 3-1** presents the geographic extent for each resource CIAA. The temporal boundary for most resources is the 35-year life of the project. For wildlife and vegetation that temporal boundary includes an additional 5 years toward achievement of agency-approved reclamation standards.

Table 3-1 Geographic Scope for Cumulative Impact Analysis

Resource	Cumulative Impact Analysis Area (CIAA)
Air Quality	1-mile radius
Public Health	1-mile radius
Water	½-mile radius
Terrestrial and Aquatic Wildlife Resources and Ecosystems	1-mile radius
Soils	Full extent of disturbance
Vegetation	1-mile radius
Public Welfare	1-mile radius

4.0 SUMMARY OF RESOURCE IMPACTS

4.1 AIR

4.1.1 Resource Description

There are a variety of air emission sources at the Wakeman 20-17 location and within the CIAA including: agricultural fields, vehicle traffic, and oil and gas production sites. Implementation of the Wakeman 20-17 project would have a cumulative impact on air quality within the 1-mile CIAA. Demonstrated by the Emissions Inventory in Form 2B, the cumulative effects of the proposed project on air emissions in the CIAA would be minor.

4.1.2 Direct and Indirect Impacts

CDPHE's February 21, 2017, report titled "Assessment of Potential Public Health Effects from Oil and Gas operations in Colorado" evaluated over 10,000 air samples in regions of Colorado where people are living near oil and natural gas development. It concluded that all measured air concentrations were below short- and long-term safe levels. In addition, the CTEH, LLC July 28, 2020 report titled "Compilation of Benzene Measurements Near Wellpads in Colorado: A Comparison to Heath Guideline Exposure Values" compiled over 6,500 air samples of benzene during various operational phases. Their findings showed 99.9% of measured values were below the acute valve for benzene of 9 ppb. Based on these reports and findings, it is not anticipated that the proposed operations will present any potential acute or chronic, short- or long-term incremental impacts to public health.

Construction, drilling and completions operations will result in an increase in emissions for the surrounding area from both stationary and mobile sources.

Pre-Production Estimated Emissions

NOx	CO	VOCs	Methane	Ethane	CO2	N2O
151.31	17.95	27.07	5.34	2.86	9301.86	0.0

Post-Production Estimated Emissions

NOx	CO	VOCs	Methane	Ethane	CO2	N2O
4.13	16.955	27.445	8.968	17.345	1470.042	0.003

4.1.3 Cumulative Impacts

Impacts to air resources would be minimized and mitigated by the measures described in Sections 5 and 6 of this Plan. Emissions would be permitted and regulated by the Colorado Department of Public Health and Environment, Air Pollution Control Division, and would be subject to appropriate controls to reduce emissions to minimal levels. Based on the level of emissions expected to be released as the result of implementation of this proposed project, the contribution to past, present, and reasonably foreseeable projects represents a minor cumulative increase to emissions in the air resources in the CIAA.

4.2 PUBLIC HEALTH

As described in the Form 2B, The Public Health section refers to emissions of different pollutants that may be emitted from equipment and activities during drilling and/or completions operations on the Oil and Gas Location. The discussion of these emissions is addressed in the Air Resources section, above.

4.3 WATER RESOURCES

4.3.1 Resource Description

There are no water bodies (i.e., ponds, stream, rivers) in areas proposed for disturbance. Proposed facilities, of the location are in an area that is typically active agriculture crop production. There are no drainages included within areas proposed for disturbance. Within one mile of the working pad surface: Lutz Reservoir, Higgins Lake, Mayers Reservoir and three (3) un-named freshwater ponds. There are several additional un-named freshwater ponds according to topographical maps but are not present. Barr Lake and Brighton Lateral Ditch are greater than 1 mile from the working pad surface. They will not be impacted by this development.

4.3.2 Direct and Indirect Impacts

Construction and operation of the proposed project could potentially impact water resources that exist within ½-mile of the proposed facilities based on the potential for increases in localized erosion and sedimentation rates. Implementation of the proposed Project could temporarily increase soil compaction on nearby existing roads, and on the proposed new portion of access road and well pad. As a result of the localized increases in soil compaction, there is the likelihood that surface runoff would be increased and would be higher than in undisturbed areas near the proposed project. Based on the lack of substantial pathways (surface drainages) near the proposed project and with the successful implementation of project-related soil erosion control measures, there is low likelihood of substantial sedimentation of intermittent drainages in the area.

4.3.3 Cumulative Impacts

Construction and production activities at the proposed Wakeman 20-17 site combined with other past, present, and reasonably foreseeable activities in the area could increase the possibility for accidental releases of industrial products, including fuels, lubricants, and other petroleum products. Such accidental releases could impact local groundwater resources, if releases are of sufficient magnitude. The proposed Wakeman 20-17 location will store approximately 1600 barrels (bbls) of oil in 2 tanks; and 1600 bbls of produced water in 2 tanks;. Successful implementation of project-related best practices and mitigation measures will result in negligible cumulative impacts to local water resources.

Water would be obtained from existing, permitted sources of surface water including Barr Lake and Fulton Ditch, including an estimated 4,733,333 bbls of surface water.

4.4 TERRESTRIAL ECOSYSTEM AND WILDLIFE RESOURCES

4.4.1 Resource Description

The habitats within the proposed Wakeman 20-17 project area are characterized as disturbed. All of the proposed disturbance area is occupied by crop land. No trees, natural habitats, or other wildlife resources are known to exist in the area proposed for disturbance. There no High Priority Habitats within 1 mile of the project area.

4.4.2 Direct and Indirect Impacts

Implementation of the proposed project could result in direct and indirect impacts to wildlife. There are no native plant habitats in areas proposed for disturbance; as such there would no direct impacts to native or special status plant species. Direct impacts are those that result in mortality, injury, and behavioral changes (for example: displacement) to wildlife. Direct impacts to wildlife typically occur during construction when wildlife is unable to avoid operating construction equipment and other project-related vehicles. Because the areas proposed for disturbance are not expected to offer high quality habitats for wildlife species, direct impacts would likely be negligible. Indirect impacts to wildlife typically include habitat loss, changes in local habitats based on the introduction of noxious weeds, and project-related increases in predator densities or concentrations. Indirect impacts to wildlife species are expected to be minimal, as no undisturbed wildlife habitats would be impacted through implementation of the proposed project.

4.4.3 Cumulative Impacts

Implementation of the proposed Wakeman 20-17 project would have a minor cumulative impact on locally occurring wildlife and wildlife habitats, as the project is proposed for an area typically used to grow commercial crops. No undisturbed, native habitats would be removed or altered during implementation of the proposed project. Implementation of the proposed project would not result in cumulative impacts on High Priority Habitats (HPH) because none exist in areas proposed for disturbance

4.5 SOIL RESOURCES

4.5.1 Resource Description

The proposed Wakeman 20-17 project area (including access road) includes Vona loamy sand, 3 to 9 percent slopes (4.511 acres), Ascalon sandy loam, 3 to 5 percent slopes (2.773), and Ascalon sandy loam, 0 to 3 percent slopes (0.523).

4.5.2 Direct and Indirect Impacts

Implementation of the proposed project, including surface disturbing activities, could result in soil compaction, and increased erosion and sedimentation. Compaction of soils can lead to decreases in water and air absorption. Severe compaction can also lead to a conversion from aerobic to anaerobic soil conditions, thereby altering organisms in the soil and subsequently causing changes in soil nutrient cycling.

4.5.3 Cumulative Impacts

Implementation of the proposed project will have a negligible cumulative impact on soil resources in the area. Past, present, and reasonably foreseeable projects and activities in the area have likely resulted in similar impacts to soil resources.

4.6 PUBLIC WELFARE

4.6.1 Noise

Resource Description

The proposed project is located in Adams County where agricultural operations and residential and commercial development has taken place. There are five (5) RBUs within 2,000'. There are no high occupancy building units (HOBUs, not including school and daycares) within 5,280 feet of the proposed working pad. There are no schools or day care centers within 1 mile of the Location.

Direct and Indirect Impacts

The *unmitigated noise impact models* for drilling and fracking show an estimated sound level of 48-55.0 dBA for drilling and 52-59 dBA for fracking operations at the receiver. With the proposed mitigation measures of *32' tall sound walls*, *mitigated noise impact models* show an estimated sound levels to be between 40-46 dBA for drilling and 43-48 dBA for fracking operations. The noise barrier would decrease the overall noise level of the drilling operations by 8-10 dBA and 8-10 dBA for fracking operations at the receiver.

Receptors to increased noise levels due to operations related to construction of the Location, drilling, completions and flowback are the nearby RBUs. The typical primary noise sources generated by oil and gas drilling operations include the drilling rig engines, compressors, generators, mud pumps, shakers, and ancillary support equipment.

The maximum noise levels generated during oil and gas completions operations are produced from the truck mounted engines which drive the high-pressure pumps. Support equipment such as sand trucks, water pumps and generators have a small contribution to the over-all noise levels of the operations. Off-site fracturing noise levels typically do not vary greatly from operator to operator, but the off-site transmission of the noise can be affected by the surrounding topography of the fracture site.

Cumulative Impacts

With the use of 32' temporary sound walls during drilling, completions and flowback operations, short term noise impacts will not have cumulative impacts to the surrounding receptors. Noise levels will decrease significantly once all wells have been completed and are in production.

4.6.2 Odor

Resource Description

There will be a temporary increase in odors during pre-production operations from equipment and traffic exhaust and fluid management during drilling and completions operations.

Direct and Indirect Impacts

Implementation of the proposed project has the possibility of creating short-term and temporary changes to odors in the vicinity of the project. Such impacts would primarily occur during drilling and be associated with using oil-based mud and drill cuttings temporarily stored on the site.

Cumulative Impacts

Implementation of the proposed project would result in short-term and temporary odor impacts within the ½ mile CIAA. These impacts would not be uncommon to other similar oil and gas projects in the region and would likely be familiar to most people that live or work in the area.

4.6.3 Light

Resource Description

Proposed lighting to facilitate low-light working conditions will be exterior flood and spot type lighting. During drilling and completions operations, the proposed lighting will be temporary and be provided by portable light towers and lights permanently affixed to equipment (e.g., the drilling rig). The development of the project will require most of the work operations to be performed continuously (7-days a week & 24-hour a day). Proposed lighting will change for each work operation of each phase of the project. Lighting Best Management Practices (see Section V, below) will be used to minimize light pollution during all work operations of the proposed project. All lighting shall conform to Federal, State, and Industry recognized standards for both on-site workplace safety and off-site public and wildlife protection. Care will be taken to keep lighting levels at the specified levels on the lighting plans while providing safe, well-lit working areas. Care will also be taken to prevent unintended light from leaving the site and becoming a hazard or nuisance to the public or surrounding wildlife habitat.

Direct and Indirect Impacts

The greatest potential for light impacts would occur during the drilling and completions phases of the proposed project. A sound wall would be constructed around the working pad surface and would serve to shield vehicle drivers on E. 136th Avenue from light sources during the drilling and completion phases of the project. Receptors to the north, east, and west of the project would be exposed to project-related light sources during the drilling and completions phases.

Cumulative Impacts

There would not be any long-term permanent light-related cumulative impacts associated with implementation of the proposed project. It is expected that the permanent lighting utilized during Production Operations will not exceed the maximum permissible light levels.

5.0 MINIMIZATION MEASURES

In § 34-60-106 (2.5), C.R.S., the COGCC defines “minimizing adverse impacts” as

“providing necessary and reasonable protections to reduce the extent, severity, significance, or duration of an unavoidable direct, indirect, and cumulative adverse impacts to public health, safety, welfare, the environment, or wildlife resources from oil and gas operations.”

Minimization measures reduce impacts to the greatest degree that is practical and can include operational and mechanical controls. POCO has committed to the minimization measures listed in the following sections. These are the same minimization measures presented in the Operations Plan that was submitted as an attachment to the Project’s Form 2A.

5.1 AIR QUALITY

- Measures associated with fugitive dust include:
- POCO will gravel all working surfaces and perform interim reclamation within six months of well drilling and completion.

- Utilize existing vegetation, trees slash or brush piles to cover disturbed areas not used for vehicle traffic.
- Application of fresh water to disturbed areas during construction and dry season.
- Applications of approved chemicals may be applied to areas not needed for traffic to form a less erodible soil.
- Operations will be confined to the location working surface.
- Continuous monitoring of disturbed areas to evaluate additional BMPs needed.
- Fresh water or magnesium chloride application to graveled surfaced of the Location and associated roads.
- Speed limit signs will be posted per surface owner agreement.
- Contractors will be notified of speed limits if no signs are posted.
- Regular road maintenance such as grading and adding additional gravel as needed.
- East 136th Avenue, which will be used to access the Wakeman 20-17 location, will be upgraded.
- Remote technologies (for example, supervisory control and data acquisition (SCADA) will be used to monitor well operations. This will reduce emissions from vehicle traffic by reducing the number of vehicle trips to the site.
- Produced water storage tank emissions will be captured and routed to an emission control device that has at least 95 percent design destruction efficiency.
- Instrument air will be used to operate all pneumatic control valves on location.
- Tanks and vapor control systems will be designed and constructed in accordance with Air Quality Control Commission Regulation Number 7.
- A Leak Detection and Repair Program will be implemented. This will include monthly inspections using infrared cameras.
- There will be no emission-producing reserve pits.

5.2 PUBLIC HEALTH

- Remote technologies (for example, supervisory control and data acquisition (SCADA) will be used to monitor well operations. This will reduce emissions from vehicle traffic by reducing the number of vehicle trips to the site.

5.3 WATER RESOURCES

- A Stormwater Management Plan was prepared. This plan will guide site-specific efforts to protect Waters of the State that could receive stormwater runoff from the proposed location.
- There will be no staging, refueling, or chemical storage areas in the vicinity of onsite water resources.
- Potential pollutants located onsite will be sealed, wrapped, or covered when not in use so as to eliminate or minimize contact with stormwater runoff.
- Proper storage, safe-handling, good housekeeping and spill prevention practices will be used to prevent pollutants from leaving the site.
- During construction, disturbed slopes may be covered with coconut blankets, straw mulch, or straw wattles and maintained for the life of the project or until slopes are stabilized and revegetated.
- With appropriate landowner authorization, baseline water quality samples will be collected from agency-approved water wells in the vicinity of the proposed oil and gas location.

- Proposed wells will be equipped with technology that will allow for automatic well shut-in in the event of an unplanned release.

5.4 TERRESTRIAL ECOSYSTEMS AND WILDLIFE RESOURCES

- Proposed production facilities will be consolidated and centralized as much as possible in an effort to minimize impact to wildlife habitats.
- Fugitive dust control measures will be implemented.
- Screens and other nesting barriers will be installed on stacks, heater treater openings, and fired vessels to prevent nesting by migratory bird species.

5.5 SOIL RESOURCES

- Topsoil and Stormwater Management Plans were prepared for the proposed site and will include measures that will avoid and minimize impacts to soil resources. Some of these measures include the following:
 - Topsoil will be stripped from the disturbance area and will be stored onsite for future use.
 - Topsoil stockpiles will be protected from wind and water erosion.
 - Weed management practices will be used to prevent weed establishment on the topsoil stockpile.
 - Installation of coconut blankets, straw mulch, or straw wattles, sediment basins, swales, and perimeter ditches will be used to minimize erosion from disturbed areas.
 - Biweekly inspections by a third-party contractor of BMP integrity and effectiveness will be implemented. Deficiencies will be noted and submitted to the operator and addressed in a timely manner.
 - Construction activities will be curtailed during wet periods in an effort to avoid unnecessary soil disturbance.
 - All roads will be recontoured and revegetated to a stable condition, unless the landowner directs differently.
- Cut and fill areas will be regraded to match pre-project contours, to the extent possible.
- The topsoil stockpile will be graded to ensure all surface stability.
- Soils in areas associated with production operations or for subsequent drilling operations will be stabilized toward minimization of dust and erosion in these areas.
- A Spill Prevention, Control, and Countermeasure Plan was prepared and implemented toward protecting soils from spills and releases.

5.6 PUBLIC WELFARE – NOISE, ODOR, AND LIGHT

Public Welfare

- Equipment, including welding trucks, will be equipped with fire extinguishers and spark arresters.
- Where public exposure to pipeline corridors is possible, warning signs will be installed to inform the public of the presence of the pipeline.
- Vehicle operators will be instructed to travel at low speeds and to stay on existing public roadways, project-related travel routes, and the well pad at all times.
- Vehicle trips to the location will be reduced through the use of technologies that allow for remote monitoring of the wells (for example, SCADA). Vehicle trips to the location will also be reduced via piping rather than trucking oil from location.

Noise

- A 32' engineered sound wall will be erected around the Location.

Odor

- Drilling rig engine exhausts are pointed straight up so as not to be directed towards any occupied buildings.
- To mitigate the effects of odor from POCO's operations, POCO employs only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. These Group III drilling fluids are odorless and contain no BTEX.
- Drilling mud chillers are used to keep drilling fluid temperatures low.
- Low drilling fluid temperatures reduce the volume of fluid vaporized into the air.
- All drilling fluids will be routed through a closed loop system.
- No open earthen pits to store fluids or drill cuttings.
- Drill piping is wiped down each time the drilling operation "trips" out of the hole.
- Drill cuttings are placed in metal bins and covered to minimize odors prior to being transported to the designated waste management facilities.

Light

- A 32' engineered sound wall will be erected around the location, which will also reduce light trespass toward passing traffic on East 136th Avenue and Powhatan Road.
- If light fixtures are attached to sound walls, they will be placed beneath the top of the wall and angled downward.
- LED fixtures will be used, when feasible, toward reducing skyglow.
- Lighting on the well pad will be of sufficient intensity to allow for safe pre-production activities.
- Direct lights to drilling and completion tasks only.

6.0 MITIGATION MEASURES

COGCC defines "mitigating adverse impacts" as:

"measures that compensate for unavoidable direct, indirect, and cumulative adverse impacts and loss of such resources from oil and operations".

Mitigation measures are used to offset the intensity or severity of impacts and can include compensatory actions and administrative controls. The following mitigation measures for resources based on the cumulative impact analysis described in this Plan will be implemented.

6.1 AIR QUALITY

Minimization measures described in the previous section will address potential impacts associated air resources in the CIAA. No additional mitigation measures for air quality are included.

6.2 PUBLIC HEALTH

HAP emissions are not expected to contribute to acute or chronic risks to human health within or beyond the well pad location. No additional mitigation measures are required.

6.3 WATER RESOURCES

Minimization measures included in the site-specific SWMP combined with other measures listed in the previous section will address the potential for impacts to water resources in the CIAA. No other mitigation measures are required.

6.4 TERRESTRIAL ECOSYSTEMS AND WILDLIFE RESOURCES

- As part of final reclamation, all roads and pads will be recontoured and revegetated to a condition similar to pre-project conditions.

6.5 SOIL RESOURCES

6.6 MINIMIZATION MEASURES DESCRIBED IN THE PREVIOUS SECTION WILL ADDRESS POTENTIAL FOR IMPACTS TO SOIL RESOURCES IN THE CIAA. NO OTHER MITIGATION MEASURES ARE REQUIRED. PUBLIC HEALTH – NOISE, ODOR, AND LIGHT

Noise

- Minimization measures described in the previous section will address potential impacts associated with noise in the CIAA. No additional measures for noise are included.

Odor

- Minimization measures described in the previous section will address potential impacts associated with odors in the CIAA. No additional mitigation measures for odors are included.

Light

- Minimization measures described in the previous section will address potential impacts associated with project lighting in the CIAA.

DUST MITIGATION PLAN



POCO Operating

Wakeman 20-17 Pad

Sec. 20 T1S R65W (SWSE)

Adams County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application
and consistent with the requirements of Rule 427.a.

November 2, 2022

Providence Energy Operating LLC Adams County, Colorado

Dust Mitigation Plan

Project Summary:

Providence Energy Operating LLC's ("POCO's") proposed Wakeman 20-17 Pad "Location" is in Township 1 South, Range 65 West, Section 20 in Adams County, Colorado. The proposed Location is fee surface with a total pad disturbance of 7.807 acres, which includes the active working pad surface of 5.380 acres. During the interim reclamation and production phase 2.010 acres will be reclaimed, leaving a disturbed production area of 5.797.

Project Overview:

POCO's Dust Mitigation Plan is intended to facilitate compliance with the applicable regulations of the Colorado Oil and Gas Conservation Commission, the Colorado Department of Public Health and Environment, and Adams County.

POCO 's development of the Wakeman 20-17 Pad ("Location") requires earth disturbing activities and travel on unpaved roads which has the potential to produce fugitive dust emissions.

Dust associated with the Location activities and traffic on roads will be minimized throughout all phases such that there are minimal visible dust emissions from the Location or associated roads to the maximum extent practicable given wind and other weather conditions.

When handling sand used in hydraulic fracturing operations, POCO 's vendors will use an advanced Containerized Sand System for proppant delivery, storage on location, and delivery to the blender and frac fluid system. The containers use gravity (not pneumatics) to drop sand directly into the blender's sand hopper, basically eliminating dust generation. This system also removes people and equipment from the proppant handling operations during fracturing treatments, considerably reducing exposures and Environmental Health and Safety risks to individuals from dust generated by older sand handling equipment (like conveyor belts). Remote controls are used to efficiently open and close sand gates on the bins to further reduce silica dust creation. Zero pounds of silica dust are anticipated to migrate off the Wakeman 20-17 Pad location during completions operations.

Any chemical application will have Safety Data Sheets on location.

Compliance with Rule 427.a.

1. Location soil types:
 - VnD – Vona Sandy Loam, 3 to 9 percent slopes
 - AsC - Ascalon loamy sand, 3 to 5 percent slopes
 - AsB – Ascalon Sandy Loam, 0 to 3 percent slopes

Access Road soil types:

AsB – Ascalon Sandy Loam, 0 to 3 percent slopes

2. Proposed vehicle speed limit: 20 MPH or less on roads; 5 MPH or less on the Location.
3. Total disturbed area: 7.807 acres for the location, and production facilities.
4. The primary route to and from this location is via East 136th Avenue and Powhatan Road. Approximately, 2,265’ of existing two-track access road will need to be upgraded and/or constructed on East 136th Avenue for the remainder of the access route. The upgraded/new access road is 1.105 acres. POCO will employ onsite dust mitigation measures in the construction of the location using a layer of crushed asphalt, observing speed restrictions, and using silica dust controls when handling sand used in hydraulic fracturing operations. Road surfacing material consist of limestone, scoria or river rock or as agreed upon by the private surface owner and Adams County.
5. Number of truck trips during the Construction, Drilling, Completion and Production stages:

Development State	Time Frame	Traffic Per Stage Monthly
Surface Construction	2 weeks	750
Drilling	51 weeks (multiple phases)	2500
Completion	19 weeks (multiple phases)	15,600
Production	360 weeks	2000 (drops significantly after 1 year)

6. Plan for Suppressing Fugitive Dust Caused by Wind:
 - If wind conditions are such that work cannot be completed without creating fugitive dust, action will be immediately taken to apply water to all dust-creating surfaces.
 - Regular road maintenance will be implemented to mitigate fugitive dust.
 - Avoid unnecessary, dust-generating work on high wind days.
 - Utilize gravel and/or crushed asphalt in high wind areas on specific portions of roads and location.
7. Best Management Practices:
 - POCO will gravel all working surfaces and perform interim reclamation within six months of well drilling and completion.
 - Utilize existing vegetation, trees slash, or brush piles to cover disturbed areas not used for vehicle traffic.
 - Application of fresh water to disturbed areas during construction and dry season.
 - Operations will be confined to the location working surface.
 - Continuous monitoring of disturbed areas to evaluate additional BMPs needed.
 - Fresh water or magnesium chloride application to graveled surfaced of the Location and associated roads.

- Speed limit signs will be posted per surface owner agreement.
- Contractors will be notified of speed limits if no signs are posted.
- Regular road maintenance such as grading and adding additional gravel as needed.

Adams County Area, Parts of Adams and Denver Counties, Colorado

VnD—Vona loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2x0j7

Elevation: 4,000 to 5,600 feet

Mean annual precipitation: 12 to 17 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 130 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Vona and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vona

Setting

Landform: Hills, hillslopes

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Parent material: Eolian sands

Typical profile

A - 0 to 7 inches: loamy sand

Bt1 - 7 to 14 inches: sandy loam

Bt2 - 14 to 20 inches: sandy loam

Bk - 20 to 45 inches: sandy loam

C - 45 to 80 inches: loamy sand

Properties and qualities

Slope: 3 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.1 to 1.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY015CO - Deep Sand
Hydric soil rating: No

Minor Components

Manter

Percent of map unit: 5 percent
Landform: Interfluves, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Interfluve, base slope, side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Ascalon

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Olnest

Percent of map unit: 3 percent
Landform: Interfluves, hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Valent

Percent of map unit: 2 percent
Landform: Dunes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R067BY015CO - Deep Sand

Hydric soil rating: No

Data Source Information

Soil Survey Area: Adams County Area, Parts of Adams and Denver Counties, Colorado

Survey Area Data: Version 19, Sep 1, 2022

Adams County Area, Parts of Adams and Denver Counties, Colorado

AsC—Ascalon sandy loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tln

Elevation: 3,550 to 5,970 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 46 to 57 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Ascalon and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt1 - 6 to 12 inches: sandy clay loam

Bt2 - 12 to 19 inches: sandy clay loam

Bk - 19 to 35 inches: sandy clay loam

C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R067BY024CO - Sandy Plains, R072XY111KS - Sandy Plains

Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent

Landform: Interfluves

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY002CO - Loamy Plains, R072XY100KS - Loamy Tableland

Hydric soil rating: No

Vona

Percent of map unit: 8 percent

Landform: Interfluves

Landform position (two-dimensional): Shoulder, backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY024CO - Sandy Plains, R072XY111KS - Sandy Plains

Hydric soil rating: No

Platner

Percent of map unit: 2 percent

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY002CO - Loamy Plains, R072XY100KS - Loamy Tableland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Adams County Area, Parts of Adams and Denver Counties, Colorado

Survey Area Data: Version 19, Sep 1, 2022

Adams County Area, Parts of Adams and Denver Counties, Colorado

AsB—Ascalon sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2swl3

Elevation: 3,870 to 5,960 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 46 to 57 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Ascalon and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt1 - 6 to 12 inches: sandy clay loam

Bt2 - 12 to 19 inches: sandy clay loam

Bk - 19 to 35 inches: sandy clay loam

C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Olnest

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Adams County Area, Parts of Adams and Denver Counties, Colorado
Survey Area Data: Version 19, Sep 1, 2022

POCO OPERATING WAKEMAN 20-17 PAD PROJECT

LIGHT MITIGATION PLAN

SECTION 20, TOWNSHIP 1 SOUTH, RANGE 65 WEST, 6TH P.M.
ADAMS COUNTY, COLORADO

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I. INTRODUCTION

This light mitigation plan is being prepared for the POCO Operating's Wakeman 20-17 Pad project. The project consists of the development of infrastructure to support the drilling and production of 16 oil and gas wells located in Adams County.

The purpose of this report is to demonstrate compliance with the various State and Local lighting regulations. This report will predict the light impacts that will occur during the different development phases (Pre-Production and Production) of the project and detail the various lighting mitigation standards and practices that will be used to limit light pollution and conform to the required lighting regulations. The intent of the project's lighting plan is to provide a safely lit workplace environment that protects the surrounding public and wildlife environment.

II. GENERAL LOCATION AND DESCRIPTION

A. LOCATION AND EXISTING CONDITIONS

The Wakeman 20-17 Pad is located on a 42-acre parcel of land owned by Katherine L Wakeman in the SW1/4 SE1/4 of Section 20, Township 1 South, Range 65 West, 6th P.M. The site is located approximately 0.4 mile east of the intersection of E. 136th Ave. and Powhatan Rd. The parcel is zoned agricultural-A, and the existing land-use is rangeland.

B. PROPOSED DEVELOPMENT

The proposed development will include construction of infrastructure to support oil & gas gathering from the proposed well pad. The Pre-Production Phase will be the initial phase of the project beginning with the pad construction and will remain until all the wells have been drilled and hydraulically stimulated. The proposed Pre-Production Phase working pad surface (WPS) will be 5.4-acres (234,337 SF). The Production Phase will be the project's final phase and will include drill-out, flowback, and production activities. Due to the continuous nature of oil and gas operations, many of the pre-production activities mentioned above must be performed during night-time hours.

C. PROPOSED LIGHTING

Proposed lighting to facilitate low-light working conditions will be exterior flood and spot type lighting. During drilling and completions operations, the proposed lighting will be temporary and be provided by portable light towers and lights permanently affixed to equipment (e.g., the drilling rig). The development of the project will require most of the work operations to be performed continuously (7-days a week & 24-hour a day). Proposed lighting will change for each work operation of each phase of the project. The light fixture schedules for the proposed lighting are included below in each work operation section.

Lighting Best Management Practices (see Section V, below) will be used to minimize light pollution during all work operations of the proposed project. All lighting shall conform to Federal, State, and Industry recognized standards for both on-site workplace safety and off-site public and wildlife protection (OSHA, FAA, COGCC, IESNA, and ANSI). Care will be taken to keep lighting levels at the specified levels on the lighting plans while providing safe, well-lit working areas. Care will also be taken to prevent unintended light from leaving the site and becoming a hazard or nuisance to the public or surrounding wildlife habitat.

III. PRE-PRODUCTION PHASE FACILITY LIGHTING PLAN

The Pre-Production Phase will consist of the following work operations: Pad Construction Operations, Drilling Operations, and Hydraulic Stimulation Operations. The state and local governing lighting regulations for this section will be the COGCC's Rule 424, specifically 424.a.(2).A, which also includes Rule 424.c. Lighting photometric plans for all operations of the Pre-Production Phase should address adequate lighting to ensure on- and off-site safety during work operations while assessing the lighting impacts to the health, safety, and welfare of persons occupying building units within 2,000-feet, motorists on roads within 2,000-feet, and wildlife in high priority habitats within 2,000-feet. During this phase of the project, wall panels (e.g., visual/sound walls) will be placed along the perimeter of the WPS.

A. PAD CONSTRUCTION OPERATIONS

Pad Construction Operations typically consist of structure demolition, equipment haul-off, and grading of the proposed well pad to facilitate the development of the new wells. Pad Construction Operations also include placing necessary utilities to support the wells. It is anticipated that work for this operation will only occur during daylight hours, which is adequate for safely completing Pad Construction Operations. No lighting, permanent or temporary, is planned for Pad Construction Operations.

B. DRILLING OPERATIONS

Drilling Operations consist of bringing a drill rig onto the site and drilling the proposed wells. This work operation will take place continuously (7-days a week & 24-hour a day). Current development plans include utilizing a single drilling rig development scenario during Drilling Operations. Lighting will be temporary and be provided by portable light towers, lights affixed to the visual/sound walls, and lights permanently affixed to the drilling rig. A Drilling Operations Photometric Plan and a Drilling Rig Photometric Plan are attached as Appendix A. All proposed lighting for safely completing the Drilling Operations is listed below:

Table 1 – Drilling Operations Lighting Fixture Schedule.

Light Type	Number of Units	Approximate Height, FT (above GE)	Wattage per Unit	Lumens per Unit	Total Lumens
LED Flood Light Tower	4	25	1,400	154,000	616,000
LED Flood Light Wall Mount	8	25	1,400	90,342	722,736
Lights Permanently Affixed to Drill Rig	1	Varying		See Plan	See Plan
				Total Lumens	1,338,736*

**Plus, additional lighting permanently affixed to the drill rig.*

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report, fixture specification sheet and BUG calculation are included in Appendix F. If deemed necessary, additional light units may be utilized to address safety concerns. Contact a lighting engineer to verify that any additional lighting units and lighting BMPs will remain within the required lighting standards stated in this report.

C. HYDRAULIC STIMULATION OPERATIONS

Hydraulic Stimulation Operations consist of hydraulically fracturing (frac) the proposed wells. This work operation will take place continuously (7-days a week & 24-hour a day). Current development plans include utilizing a single frac crew development scenario during Hydraulic Stimulation Operations. Lighting will be temporary and

be provided by portable light towers and lights affixed to the visual/sound walls. A Hydraulic Stimulation Operations Lighting Plan is attached as Appendix B. All proposed lighting for safely completing the Hydraulic Stimulation Operations is listed below:

Table 2 – Hydraulic Stimulation Operations Lighting Fixture Schedule.

Light Type	Number of Units	Approximate Height, FT (above GE)	Wattage per Unit	Lumens per Unit	Total Lumens
LED Flood Light Tower	5	25	1,400	154,000	770,000
LED Flood Light Wall Mount	8	25	1,400	90,342	722,736
Total Lumens					1,492,736

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report, fixture specification sheet and BUG calculation are included in Appendix F. If deemed necessary, additional light units may be utilized to address safety concerns. Contact a lighting engineer to verify that any additional lighting units and lighting BMPs will remain within the required lighting standards stated in this report.

D. REGULATIONS FOR LIGHTING IMPACTS TO HEALTH, SAFETY, AND WELFARE

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report. As shown on the Drilling Operations Photometric Plan, Drilling Rig Photometric Plan, and Hydraulic Stimulation Operations Lighting Plan (Appendix A and Appendix B), lighting levels will be contained within the 100-foot offset of the WPS boundary during all work operations of Pre-Production Phase. As noted, lighting impacts for this phase of the project will be governed by Rule 424 of the COGCC. The following discusses the impacts to the public and surrounding habitat as defined Rule 424.c.(3):

1. Persons Occupying Building Units within 2,000-feet of the Oil and Gas Facility:
 - a. There are five Residential Building Units within 2,000-feet of the Oil and gas Facility. They are approximately 1,767 feet to the north, 1,863 feet and 1,733 feet to the northeast, and 1,428 feet and 1,795 feet to the southeast of the WPS. No impacts are anticipated to the Residential Building Units due to the implemented lighting BMPs and no direct light reaching the Residential Building Units.
2. Motorists on Roads within 2,000-feet of the Oil and Gas Facility:
 - a. E. 136th Ave. is approximately 331 feet to the south of the WPS. Powhaton Road is approximately 1,861 feet to the east. E 133rd Circle is approximately 1,439 feet to the southeast. No impacts are anticipated to motorists on the road due to the implemented lighting BMPs and no direct light reaching the road.
3. Wildlife occupying any High Priority Habitat within 2,000-feet of the Oil and Gas Facility:
 - a. No High Priority Habitat within 2,000 feet of the WPS.

IV. PRODUCTION PHASE FACILITY LIGHTING PLAN

The Production Phase will be the final phase of the project. The Production Phase will consist of the following work operations: Drill-Out and Flowback Operations and Productions Operations. The state and local governing lighting regulations for this section will be the COGCC's Rule 424, specifically 424.a.(2).B., which also includes Rule 424.d.&e. Lighting photometric plans for all operations of the Production Phase should address adequate lighting to ensure on- and off-site safety during work operations while assessing the lighting impacts to the health,

safety, and welfare of persons occupying building units within 2,000-feet, motorists on roads within 2,000-feet, and wildlife in high priority habitats within 2,000-feet. Additionally, lighting photometric plans for all operations of the Production Phase are required to conform to a zoning/land-use maximum permissible light level defined in Rule 424.d. The permissible light level is an overall average of the site's light intensity and is calculated by the total lumens divided by the total WPS. The site is within an agricultural zoning/land-use, with a maximum permissible light level of 2.5 lumens per square foot (LM/SF). During a portion of this phase of the project, wall panels will be placed along the perimeter of the WPS. Wall panels will be removed for production operations.

A. DRILL-OUT AND FLOWBACK OPERATIONS

Drill-Out and Flowback Operations consist of recovering fluids following Hydraulic Stimulation Operations. Flowback Operations also consist of equipment and material mobilization from the site. The mobilization activities may continue approximately 7 days following the drill-out work. These work operations will take place continuously and simultaneously (7-days a week & 24-hour a day). Lighting will be temporary and be provided by portable light towers and lights affixed to the visual/sound walls. Permanent lighting affixed to poles at the production facility will also exist. The Drill-Out Operations Photometric Plan is attached as Appendix C. All proposed lighting for safely completing Drill-Out Operations is listed below:

Table 3 – Drill-Out Operations Lighting Fixture Schedule.

Light Type	Number of Units	Approximate Height, FT (above GE)	Wattage per Unit	Lumens per Unit	Total Lumens
LED Flood Light Tower	5	25	1,400	154,000	770,000
LED Flood Light Wall Mount	8	25	1,400	90,342	722,736
Total Lumens					1,492,736

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report, fixture specification sheet and BUG calculation are included in Appendix F. If deemed necessary, additional light units may be utilized to address safety concerns. Contact a lighting engineer to verify that any additional lighting units and lighting BMPs will remain within the required lighting standards stated in this report.

It is expected that the temporary lighting utilized during Drill-Out Operations will exceed the maximum permissible light level of 2.5 lumens per square foot (LM/SF) of the total WPS. The following is the calculated light levels for the Drill-Out Operations:

Table 4 – Calculated Drill-Out Operations Permissible Light Levels.

Description	Total Lumens	WPS (SF)	Maximum Permissible Light LM/SF	Calculated Permissible Light LM/SF
Drill-Out Temporary Lighting	1,798,895	234,337	2.5	7.7
TOTAL LIGHT LEVEL				7.7

With the placement of the 32-foot high wall panels, and utilizing lighting BMPs, it is expected that no direct light will extend beyond the boundary of the site. The Drill-Out Operations Photometric Plan in Appendix C, shows the calculated light distribution at the site during Drill-Out Operations. No direct light is anticipated to leave the 100-foot offset of the WPS. Lighting Standards and BMP, as described in Section V, will be implemented to

prevent direct light from leaving the site.

The Flowback Operations Photometric Plan is attached as Appendix D. All proposed lighting for safely completing Flowback Operations is listed below:

Table 5 – Flowback Operations Lighting Fixture Schedule.

Light Type	Number of Units	Approximate Height, FT (above GE)	Wattage per Unit	Lumens per Unit	Total Lumens
LED Flood Light Tower	5	25	1,400	154,000	770,000
LED Flood Light Wall Mount	8	25	1,400	90,342	722,736
Total Lumens					1,492,736

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report, fixture specification sheet and BUG calculations are included in Appendix F. If deemed necessary, additional light units may be utilized to address safety concerns. Contact a lighting engineer to verify that any additional lighting units and lighting BMPs will remain within the required lighting standards stated in this report.

It is expected that the temporary lighting utilized during Flowback Operations will exceed the maximum permissible light level of 2.5 lumens per square foot (LM/SF) of the total WPS. The following is the calculated light levels for the Flowback Operations:

Table 6 – Calculated Flowback Operations Permissible Light Levels.

Description	Total Lumens	WPS (SF)	Maximum Permissible Light LM/SF	Calculated Permissible Light LM/SF
Flowback Temporary Lighting	1798,895	234,337	2.5	7.7
TOTAL LIGHT LEVEL				7.7

With the placement of the 32-foot high wall panels, and utilizing lighting BMPs, it is expected that no direct light will extend beyond the boundary of the site. The Flowback Operations Photometric Plan in Appendix D, shows the calculated light distribution at the site during Flowback Operations. No direct light is anticipated to leave the 100-foot offset of the WPS. Lighting Standards and BMP, as described in Section V, will be implemented to prevent direct light from leaving the site.

B. PRODUCTION OPERATIONS

Production operations consist of the daily gathering of the resources from the wells and maintenance of the permanent production equipment. Lighting will be permanent and will be installed on poles. The Production Operations Photometric Plan is attached as Appendix E. All proposed lighting for safely completing Production Operations is listed below:

Table 7 – Production Operations Lighting Fixture Schedule.

Light Type	Number of Units	Approximate Height, FT (above GE)	Wattage per Unit	Lumens per Unit	Total Lumens
LED Flood Light Pole Mount	7	25	1,400	43,737	306,159
Total Lumens					306,159

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report, fixture specification sheet and BUG calculation are included in Appendix F. If deemed necessary, additional light units may be utilized to address safety concerns. Contact a lighting engineer to verify that any additional lighting units and lighting BMPs will remain within the required lighting standards stated in this report.

It is expected that the permanent lighting utilized during Production Operations will not exceed the maximum permissible light level of 2.5 lumens per square foot (LM/SF) of the total WPS. The following is the calculated light levels for the Production Operations:

Table 8 – Calculated Production Operations Permissible Light Levels.

Description	Total Lumens	WPS (SF)	Maximum Permissible Light LM/SF	Calculated Permissible Light LM/SF
Production Permanent Lighting	306,159	234,337	2.5	1.3
TOTAL LIGHT LEVEL				1.3

The Production Operations Photometric Plan in Appendix E, shows the calculated light distribution at the site during Production Operations. With this lighting configuration, this work operation is within the recommended regulatory limits. No direct light is anticipated to leave the 100-foot offset of the WPS.

C. REGULATIONS FOR LIGHTING IMPACTS TO HEALTH, SAFETY, AND WELFARE

All lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report. As shown on the Drill-Out Operation Photometric Plan, Flowback Operations Photometric Plan, and Production Operation Plan (Appendix C, Appendix, D, and Appendix E), lighting levels will be contained within the 100-foot offset of the WPS boundary during all work operations of the Production Phase. As noted, lighting impacts for this phase of the project will be governed by Rule 424 of the COGCC. The impacts to the public and surrounding habitat as defined Rule 424.d.(3):

1. Persons Occupying Building Units within 2,000-feet of the Oil and Gas Facility:
 - a. There are five Residential Building Units within 2,000-feet of the Oil and gas Facility. They are approximately 1,767 feet to the north, 1,863 feet and 1,733 feet to the northeast, and 1,428 feet and 1,795 feet to the southeast of the WPS. No impacts are anticipated to the Residential Building Units due to the implemented lighting BMPs and no direct light reaching the Residential Building Units.
2. Motorists on Roads within 2,000-feet of the Oil and Gas Facility:
 - a. E. 136th Ave. is approximately 331 feet to the south of the WPS. Powhatan Road is approximately 1,861 feet to the east. E 133rd Circle is approximately 1,439 feet to the southeast. No impacts are anticipated to motorists on the road due to the implemented lighting BMPs and no direct light reaching the road.

3. Wildlife occupying any High Priority Habitat within 2,000-feet of the Oil and Gas Facility:
 - a. No High Priority Habitat within 2,000 feet of the WPS.

REMAINDER OF PAGE INTENTIONALLY BLANK, BMP SECTION FOLLOWS

V. LIGHTING STANDARDS AND BEST MANAGEMENT PRACTICES (BMPS) – RULE 424.b.

The following lighting BMPs will be used to minimize and control light pollution:

- Most work operations will take place 7-days a week & 24-hour a day. Care will be taken to keep lighting levels at the specified levels on the lighting plans while providing safe, well-lit working areas during night-time and other low-light conditions. Care will also be taken to prevent unintended light from leaving the site and becoming a hazard or nuisance to the public or surrounding wildlife habitat.
- During the Pad Construction Operations, no night-time work is anticipated. Daylight work will be performed during this work operation.
- All lighting shall conform to Federal, State, and Industry recognized standards for both on-site workplace safety and off-site public protection (OSHA, FAA, COGCC, IESNA, and ANSI). No direct light, except those governed by FAA standards, shall shine beyond the boundaries of the WPS, especially onto public roads, adjacent properties, and/or high priority habitats. All lighting shall conform to all COGCC, county, municipal, and any applicable governing body's standards.
- Temporary lighting will be 4-head LED flood lights on mobile 25-foot telescoping towers and 2-head LED flood lights wall mounted (BUG Rating is B3-U3-G5). All lighting will be capable of adjustment and will be directed inward and 45°-65° downward towards working areas on the WPS. No light should shine above the horizontal plane passing through the center point of the light source. Lights will be shielded with a photometric diffusion fabric or membrane tint to prevent direct or reflected direct light from leaving the site.
- Permanent lighting will be pole mounted floodlights (BUG Rating is B4-U0-G5). All lighting will be capable of adjustment and be directed downward.
- 32-foot high wall panels (e.g., visual/sound walls) will be placed along the perimeter of the WPS and will be removed for production operations. For workplace safety, no direct or reflected light shall shine towards the entrance of the WPS.
- Watch for and remove glare and reflection points during all work operations of the project from temporary or permanent structures, temporary lighting, vehicles, construction equipment, and clothing/PPE.
- Any lighting damaged and/or improperly directed or angled will be promptly fixed and/or corrected to conform to the lighting plan.
- Equipment shall be operated and/or orientated and/or shielded in such a manner that lights permanently affixed to equipment do not shine above the horizontal plane passing through the center point of the light source or shine beyond the boundary of the WPS.
- For all work operations, once temporary lighting is in place, a lighting self-audit of the site will be performed to ensure that no unintended light will leave the site and become a hazard or a nuisance.
- For any change to the lighting during any work operations, a lighting self-audit of the site will be performed to ensure that no unintended light will leave the site and become a hazard or a nuisance.
- For non-working or shut-down days where no personnel are on-site or in working areas, non-essential temporary lighting will be turned off. If no personnel are on-site and essential temporary lighting is needed, the essential temporary lighting will be inspected every 24 hours.
- All redundant, unused, or not-needed lights will be turned off.
- Any additional light units used to address workplace safety concerns that are not shown on the lighting photometric plans will be verified by a lighting engineer to ensure that the modified lighting will remain within the required lighting standards stated in this report.
- Where safely applicable, the following are suggestions to aid in controlling and minimizing the site's lighting levels:
 - Using automation, timers, or motion sensors
 - Using or changing fixtures to full cut-off lighting fixtures to shield and direct light
 - Using or changing to lighting colors that reduce light intensity
 - Adjusting or adding additional light shields such as photometric diffusion fabric or tinted membranes
 - Adjusting or adding additional temporary wall panels (e.g., visual/sound walls)

VI. PRE-PRODUCTION PHASE FACILITY LIGHTING – 424.c.

Pre-Production Phase facility lighting will be temporary exterior lighting. To ensure the safety of all persons on- and off-site and to wildlife and their habitats, all lighting shall conform to the Lighting Photometric Plans, the Lighting Standards and the Best Management Practices (BMPs) section of this report.

The requirements of this section have already been incorporated in this report in Section III, above. Please refer to that section for the governing rules concerning safety and lighting impacts for this phase of the project.

VII. PRODUCTION PHASE FACILITY LIGHTING WHEN PERSONNEL ARE ON-SITE AND NOT ON-SITE – 424.d.& e.

To ensure the safety of all persons on- and off-site and to wildlife and their habitats, all lighting shall conform to the Lighting Photometric Plans, the Lighting Standards and the Best Management Practices (BMPs) section of this report which discusses BMPs when personnel are both on-site and off-site.

For Drill-Out and Flowback Operations, lighting will be temporary and be provided by portable light towers and lights permanently affixed to construction and maintenance equipment. All temporary lighting shall conform to the Lighting Photometric Plans, the Lighting Standards and the Best Management Practices (BMPs) section of this report. For Production Operations, lighting will be permanent and provided by pole mounted lights. All permanent lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMPs) section of this report.

The requirements of this section have already been incorporated in this report in Section IV and Section V, above. Please refer to those sections for the governing rules concerning lighting BMPs, safety, and lighting impacts for this phase of the project.

VIII. CUMULATIVE IMPACTS – 424.f.

No cumulative impacts according to COGCC's Rule 424.f. are anticipated due to the implemented lighting BMPs and no direct light reaching a building unit within 1-mile. The lighting plan for this project was developed so that the cumulative impact of the proposed lighting will conform to the required 4 lux at any residential building unit or high occupancy building unit within 1-mile of the site, measured at 5.5 feet above grade in a direct line of sight to the brightest light fixture on-site (Rule 424). For further reference, additional lighting levels at various points of interest around and from the WPS have been provided for each work operation below. Proposed lighting for this project will be contained within the 100-foot offset of the WPS boundary.

Light intensity calculations shown on the lighting plans are in foot-candles, which is defined as one lumen per square foot (LM/SF). Light intensity levels vary across the site and are dependent on the height, location, and brightness of the light source. Light intensity levels are affected by the relative position and reflectivity of objects and/or surfaces on the site. Foot-candles can be converted to lux (LM/SM) by using the following conversion: $1 \text{ Fc} = 10.8 \text{ lux}$.

A. PAD CONSTRUCTION OPERATIONS

No lighting, permanent or temporary, is planned for Pad Construction Operations, so there will be no light intensity calculations.

B. DRILLING OPERATIONS

Based upon the light intensity calculations shown on the Drilling Operations Photometric Plan in Appendix A, the maximum foot-candle (Fc) observed within the WPS during Drilling Operations will be located directly beneath the temporary wall mounted light northeast of the drilling rig, calculated as 37.8 Fc. The maximum foot-candle at the entrance of the WPS is calculated at 0.0 Fc. The maximum foot-candle at the edge of the WPS will be 0.0 Fc. The maximum foot-candle at the 100-foot offset of the WPS boundary will be 0.0 Fc. The maximum foot-candle at public roads within 1-mile of the WPS boundary will be 0.0 Fc. The maximum foot-candle at building units within 1-mile of the WPS boundary will be 0.0 Fc. The following is a summary of the calculated and required light intensity levels:

Table 9 – Drilling Operations Calculated Maximum Light Intensity at Points of Interest.

Point of Interest	Foot-Candle	Lux	Required
Within the WPS	37.8	408.2	N/A
At the Entrance of the WPS	0.0	0.0	N/A
At the Edge of the WPS	0.0	0.0	N/A
100-foot offset of the WPS boundary	0.0	0.0	N/A
Public Roads within 1-Mile of the WPS	0.0	0.0	N/A
Building Units within 1-Mile of the WPS	0.0	0.0	4 Lux

C. HYDRAULIC STIMULATION OPERATIONS

Based upon the light intensity calculations shown on the Hydraulic Stimulation Operations Photometric Plan in Appendix B, the maximum foot-candle (Fc) observed within the WPS during Hydraulic Stimulation Operations will be located directly beneath the temporary wall mounted light located northeast of the proposed row of wells, calculated as 38.7 Fc. The maximum foot-candle at the entrance of the WPS is calculated at 0.0 Fc. The maximum foot-candle at the edge of the WPS will be 0.0 Fc. The maximum foot-candle at the 100-foot offset of the WPS boundary will be 0.0 Fc. The maximum foot-candle at public roads within 1-mile of the WPS boundary will be 0.0 Fc. The maximum foot-candle at building units within 1-mile of the WPS boundary will be 0.0 Fc. The following is a summary of the calculated and required light intensity levels:

Table 10 – Hydraulic Stimulation Operations Calculated Maximum Light Intensity at Points of Interest.

Point of Interest	Foot-Candle	Lux	Required
Within the WPS	38.7	418.0	N/A
At the Entrance of the WPS	0.0	0.0	N/A
At the Edge of the WPS	0.0	0.0	N/A
100-foot offset of the WPS boundary	0.0	0.0	N/A
Public Roads within 1-Mile of the WPS	0.0	0.0	N/A
Building Units within 1-Mile of the WPS	0.0	0.0	4 Lux

D. DRILL-OUT OPERATIONS

Based upon the light intensity calculations shown on the Drill-out Operations Photometric Plan in Appendix C, the maximum foot-candle (Fc) observed within the WPS during drill-out operations will be located directly beneath the temporary wall mounted light at the northeast of the wells, calculated as 37.7 Fc. The maximum foot-candle at the entrance of the WPS is calculated at 0.1 Fc. The maximum foot-candle at the edge of the WPS will be 0.0 Fc. The maximum foot-candle at the 100-foot offset of the WPS boundary will be 0.0 Fc. The maximum foot-candle at public roads within 1-mile of the WPS boundary will be 0.0 Fc. The maximum foot-candle at building units within 1-mile of the WPS boundary will be 0.0 Fc. The following is a summary of the calculated and required light intensity levels:

Table 11 – Drill-Out Operations Calculated Maximum Light Intensity at Points of Interest.

Point of Interest	Foot-Candle	Lux	Required
Within the WPS	37.7	407.2	N/A
At the Entrance of the WPS	0.0	0.0	N/A
At the Edge of the WPS	0.0	0.0	N/A
100-foot offset of the WPS boundary	0.0	0.0	N/A
Public Roads within 1-Mile of the WPS	0.0	0.0	N/A
Building Units within 1-Mile of the WPS	0.0	0.0	4 Lux

E. FLOWBACK OPERATIONS

Based upon the light intensity calculations shown on the Flowback Operations Photometric Plan in Appendix D, the maximum foot-candle (Fc) observed within the WPS during flowback operations will be located directly beneath the temporary wall mounted light at the southwest of the wells, calculated as 37.7 Fc. The maximum foot-candle at the entrance of the WPS is calculated at 0.0 Fc. The maximum foot-candle at the edge of the WPS will be 0.0 Fc. The maximum foot-candle at the 100-foot offset of the WPS boundary will be 0.0 Fc. The maximum foot-candle at public roads within 1-mile of the WPS boundary will be 0.0 Fc. The maximum foot-candle at building units within 1-mile of the WPS boundary will be 0.0 Fc. The following is a summary of the calculated and required light intensity levels:

Table 12 – Flowback Operations Calculated Maximum Light Intensity at Points of Interest.

Point of Interest	Foot-Candle	Lux	Required
Within the WPS	37.7	407.2	N/A
At the Entrance of the WPS	0.0	0.0	N/A
At the Edge of the WPS	0.0	0.0	N/A
100-foot offset of the WPS boundary	0.0	0.0	N/A
Public Roads within 1-Mile of the WPS	0.0	0.0	N/A
Building Units within 1-Mile of the WPS	0.0	0.0	4 Lux

F. PRODUCTION OPERATIONS

Based upon the light intensity calculations shown on the Production Operations Photometric Plan in Appendix E, the maximum foot-candle (Fc) observed within the WPS during production operations will be located directly beneath the south permanent light pole of the northern production equipment, calculated as 9.1 Fc. The maximum foot-candle at the entrance of the WPS is calculated at 0.0 Fc. The maximum foot-candle at the edge of the WPS will be located directly beneath the northwest permanent light pole of the northern production equipment, calculated as 0.5 Fc. The maximum foot-candle at the 100-foot offset of the WPS boundary will be 0.0 Fc. The maximum foot-candle at public roads within 1-mile of the WPS boundary will be 0.0 Fc. The maximum foot-candle at building units within 1-mile of the WPS boundary will be 0.0 Fc. The following is a

summary of the calculated and required light intensity levels:

Table 13 – Production Operations Calculated Maximum Light Intensity at Points of Interest.

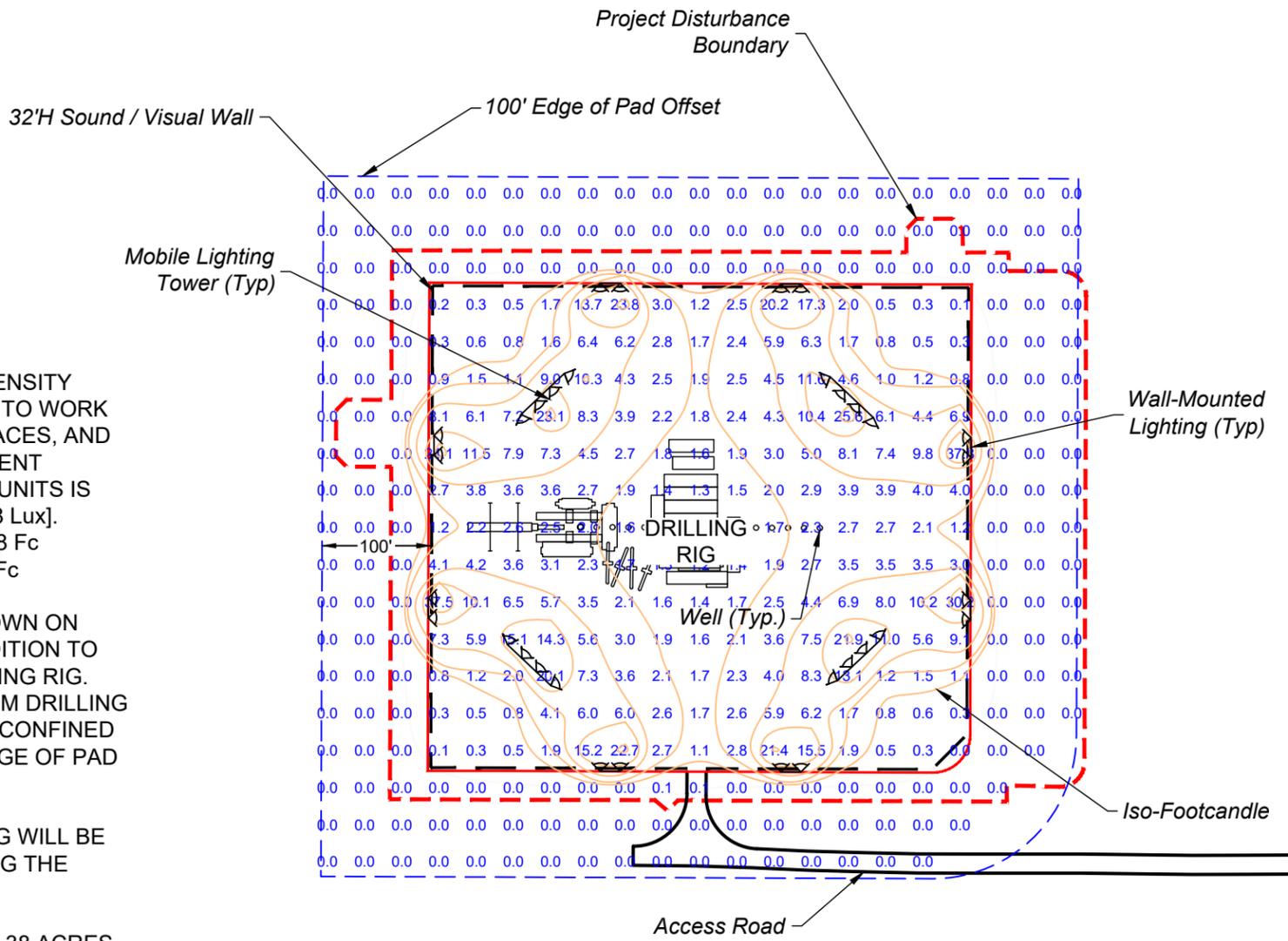
Point of Interest	Foot-Candle	Lux	Required
Within the WPS	9.1	98.3	N/A
At the Entrance of the WPS	0.0	0.0	N/A
At the Edge of the WPS	0.5	5.4	N/A
100-foot offset of the WPS boundary	0.0	0.0	N/A
Public Roads within 1-Mile of the WPS	0.0	0.0	N/A
Building Units within 1-Mile of the WPS	0.0	0.0	4 Lux

IX. CONCLUSION

This report was prepared in compliance with State and Local lighting regulations, specifically COGCC's Rule 424. The proposed lighting configurations, as shown on the Lighting Photometric Plans for the Wakeman 20-17 Pad project, conforms with the State and Local lighting regulations requirements. To ensure the safety of all persons on- and off-site and to wildlife and their habitats, all lighting shall conform to the Lighting Photometric Plans and the Lighting Standards and Best Management Practices (BMP) section of this report.

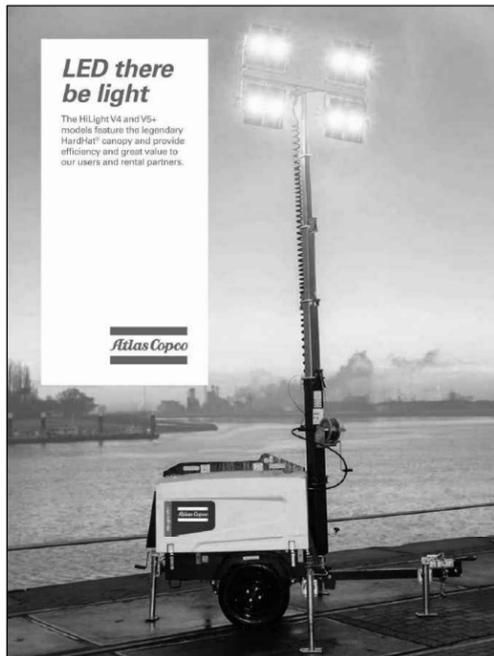
X. APPENDIX

APPENDIX A – DRILLING OPERATIONS LIGHTING PLAN



NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
 MAXIMUM = 37.8 Fc
 MINIMUM = 0.0 Fc
2. LIGHTING LEVELS SHOWN ON THIS PLAN ARE IN ADDITION TO LEVELS ON THE DRILLING RIG. DIRECT LIGHTING FROM DRILLING OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.
4. TOTAL PAD AREA = ± 5.38 ACRES



TYPICAL MOBILE TOWER LIGHTING



TYPICAL WALL MOUNTED LIGHTING

1 DRILLING PAD SITE LIGHTING PHOTOMETRIC PLAN
 SCALE: 1" = 150'

LIGHTING FIXTURE SCHEDULE									
SYMBOL	LIGHT UNIT DESCRIPTION	BUG RATING	MOUNTING INFO	VOLTS	LAMP QUANTITY	LUMENS / LAMP	UNITS QUANTITY	LUMENS / UNIT	TOTAL LUMENS
	4 HEAD FLOOD LIGHT LED MOBILE TEMPORARY LIGHTING TOWER	B3-U3-G5	25' TOWER	120	4	38,500	4	154,000	616,000
	2 HEAD LED FLOOD LIGHTS, WALL MOUNTED	B3-U3-G5	25' WALL	120	2	45,171	8	90,342	722,736

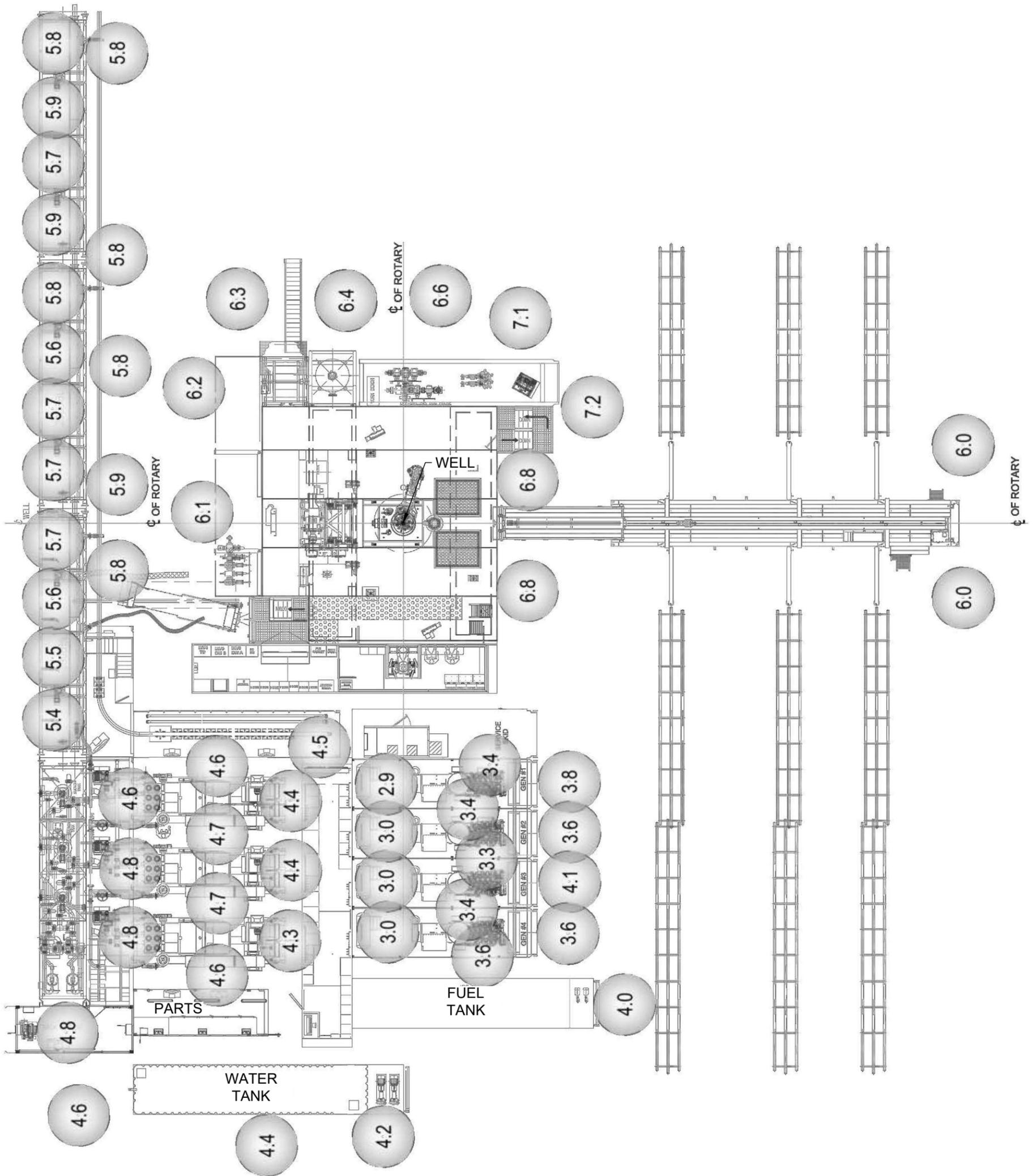


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POCO OPERATING

WAKEMAN 20-17 PAD
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 ADAMS COUNTY, COLORADO

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UELS FILE NO.: P - 2 0 3 9	REVISED:	
DRILLING OPERATIONS PHOTOMETRIC PLAN		



2 DRILLING RIG SITE LIGHTING PHOTOMETRIC PLAN

SCALE: NO SCALE

NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
2. LIGHTING LEVELS SHOWN ON THIS PLAN ARE IN ADDITION TO LEVELS ON THE DRILLING PAD SITE. DIRECT LIGHTING FROM DRILLING OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.

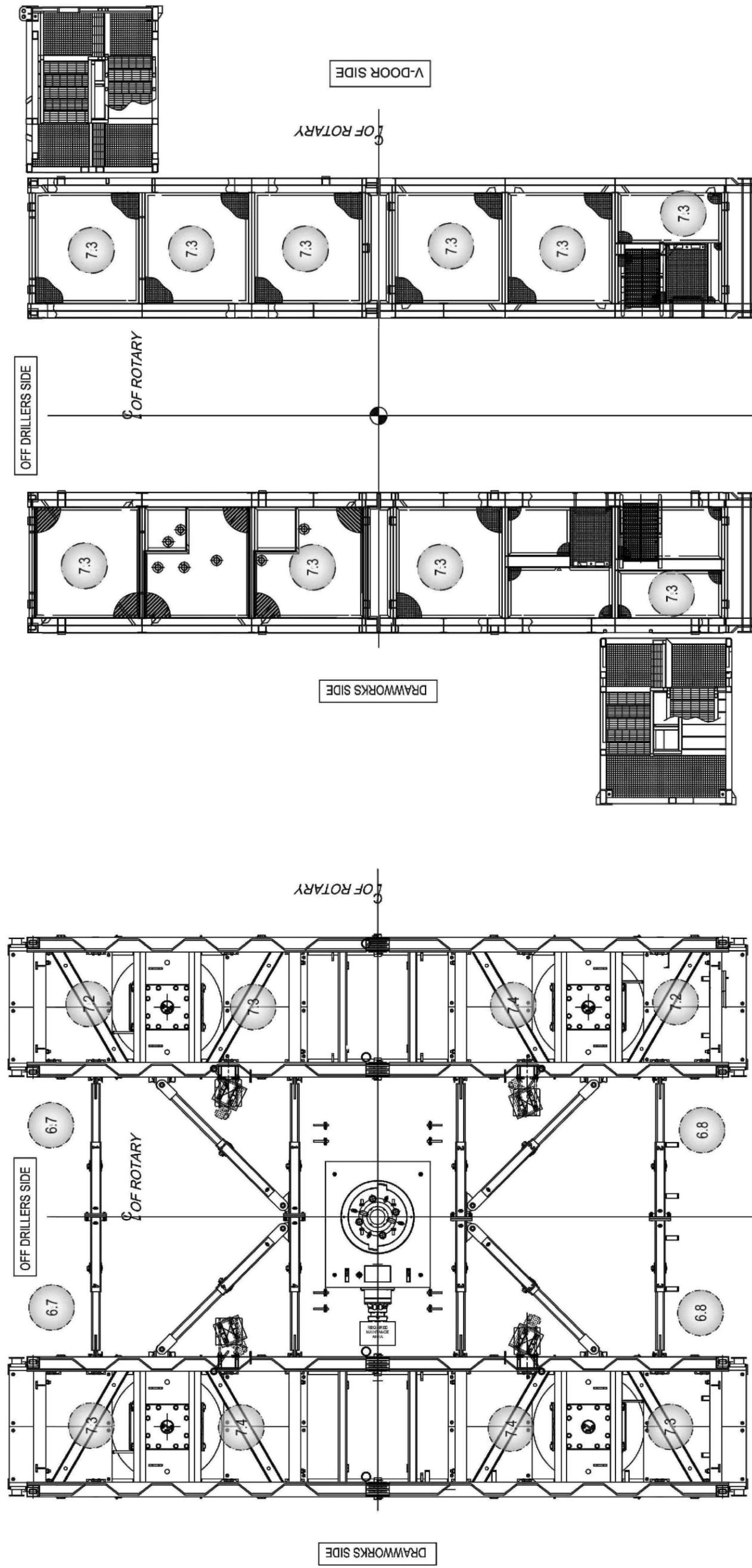
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PLAN VIEW @ TOP
SUBSTRUCTURE BOX

PLAN VIEW @ BOTTOM
SUBSTRUCTURE BOX

4 DRILLING RIG LIGHTING PHOTOMETRIC PLAN
SCALE: NO SCALE



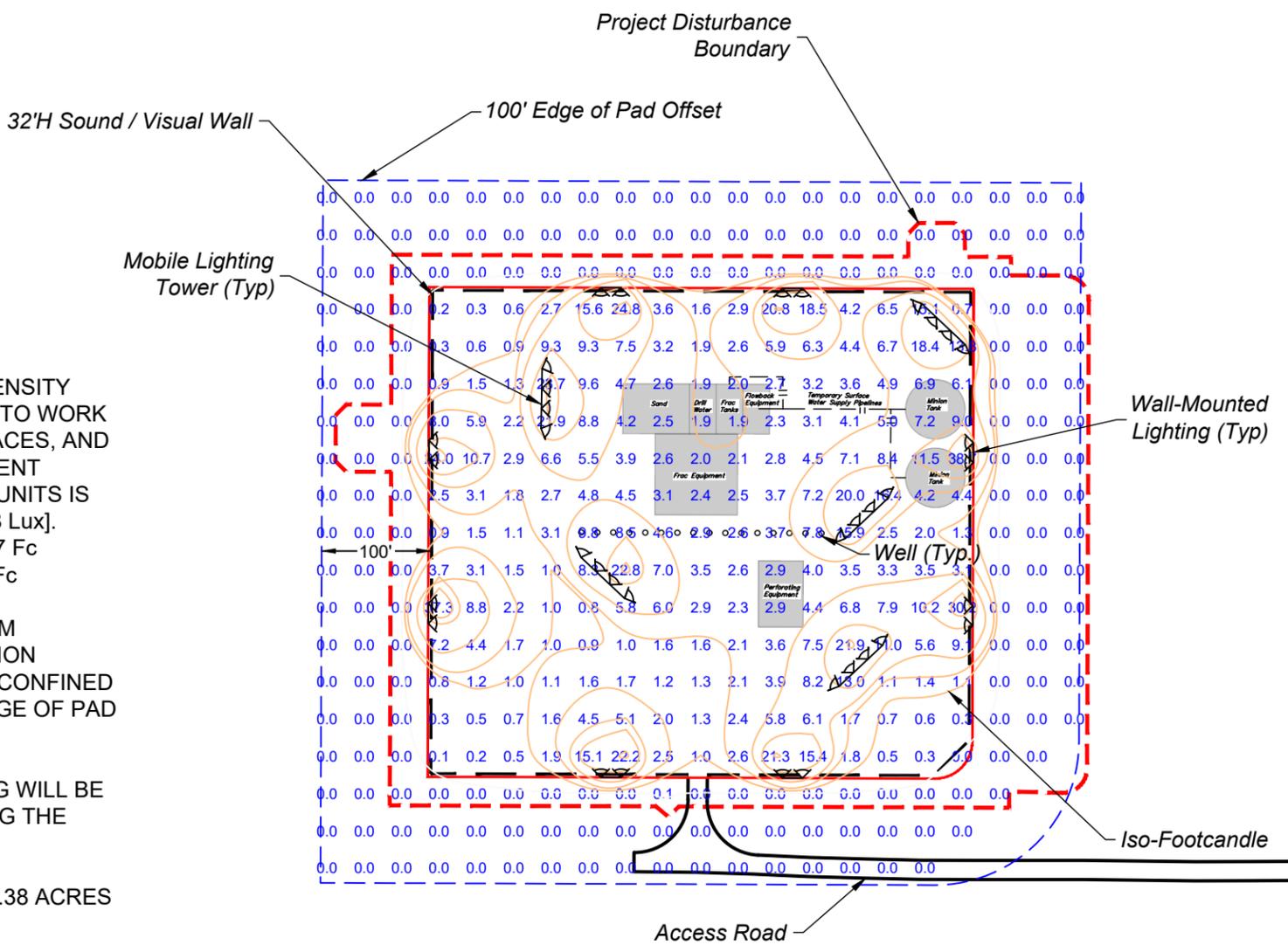
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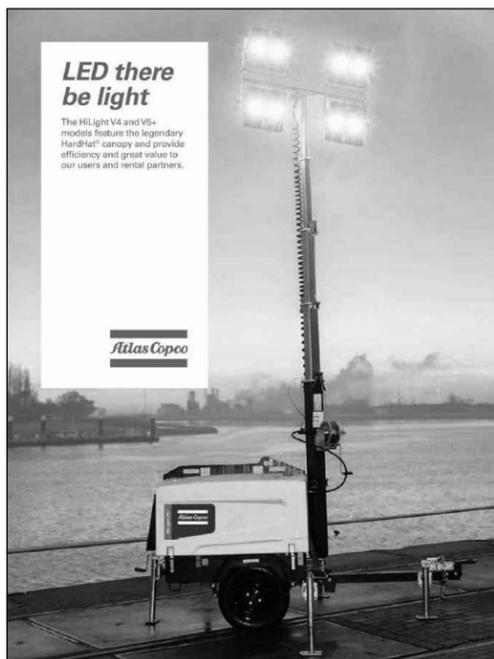
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DRILLING OPERATIONS PHOTOMETRIC PLAN		

APPENDIX B – HYDRAULIC STIMULATION OPERATIONS LIGHTING PLAN



NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
 MAXIMUM = 38.7 Fc
 MINIMUM = 0.0 Fc
2. DIRECT LIGHTING FROM HYDRAULIC STIMULATION OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.
4. TOTAL PAD AREA = ± 5.38 ACRES



TYPICAL MOBILE TOWER LIGHTING



TYPICAL WALL MOUNTED LIGHTING

1 DRILLING PAD SITE LIGHTING PHOTOMETRIC PLAN
 SCALE: 1" = 150'

LIGHTING FIXTURE SCHEDULE									
SYMBOL	LIGHT UNIT DESCRIPTION	BUG RATING	MOUNTING INFO	VOLTS	LAMP QUANTITY	LUMENS / LAMP	UNITS QUANTITY	LUMENS / UNIT	TOTAL LUMENS
	4 HEAD FLOOD LIGHT LED MOBILE TEMPORARY LIGHTING TOWER	B3-U3-G5	25' TOWER	120	4	38,500	5	154,000	770,000
	2 HEAD LED FLOOD LIGHTS, WALL MOUNTED	B3-U3-G5	25' WALL	120	2	45,171	8	90,342	722,736

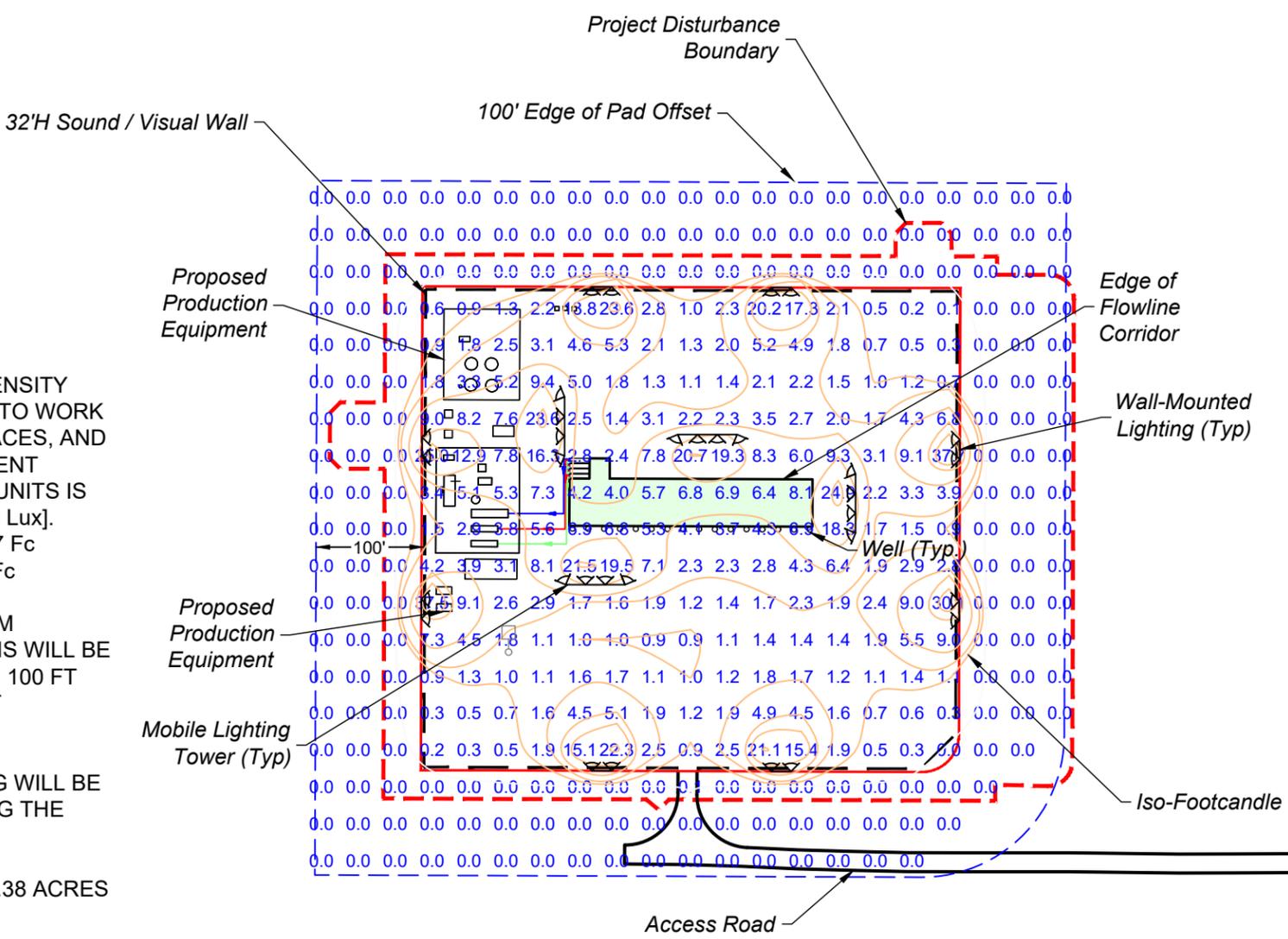


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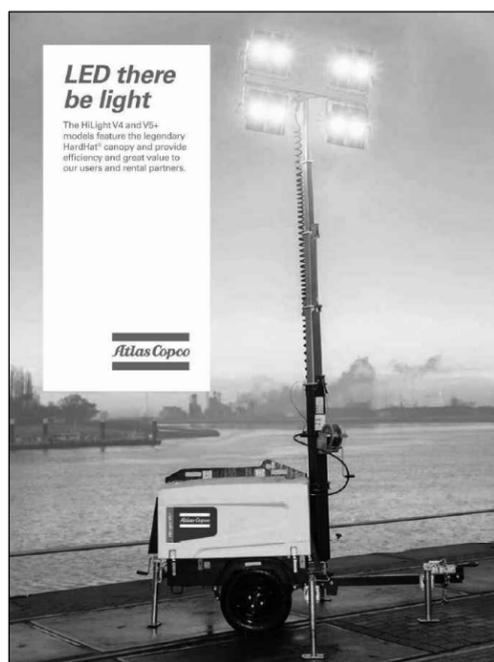
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HYDRAULIC STIMULATION OPERATIONS PHOTOMETRIC PLAN		

APPENDIX C – DRILL-OUT OPERATIONS PHOTOMETRIC PLAN



NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
 MAXIMUM = 37.7 Fc
 MINIMUM = 0.0 Fc
2. DIRECT LIGHTING FROM DRILL-OUT OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.
4. TOTAL PAD AREA = ± 5.38 ACRES



TYPICAL MOBILE TOWER LIGHTING



TYPICAL WALL MOUNTED LIGHTING

1 DRILLING PAD SITE LIGHTING PHOTOMETRIC PLAN
 SCALE: 1" = 150'

LIGHTING FIXTURE SCHEDULE									
SYMBOL	LIGHT UNIT DESCRIPTION	BUG RATING	MOUNTING INFO	VOLTS	LAMP QUANTITY	LUMENS / LAMP	UNITS QUANTITY	LUMENS / UNIT	TOTAL LUMENS
⚡	4 HEAD FLOOD LIGHT LED MOBILE TEMPORARY LIGHTING TOWER	B3-U3-G5	25' TOWER	120	4	38,500	5	154,000	770,000
⚡	2 HEAD LED FLOOD LIGHTS, WALL MOUNTED	B3-U3-G5	25' WALL	120	2	45,171	8	90,342	722,736

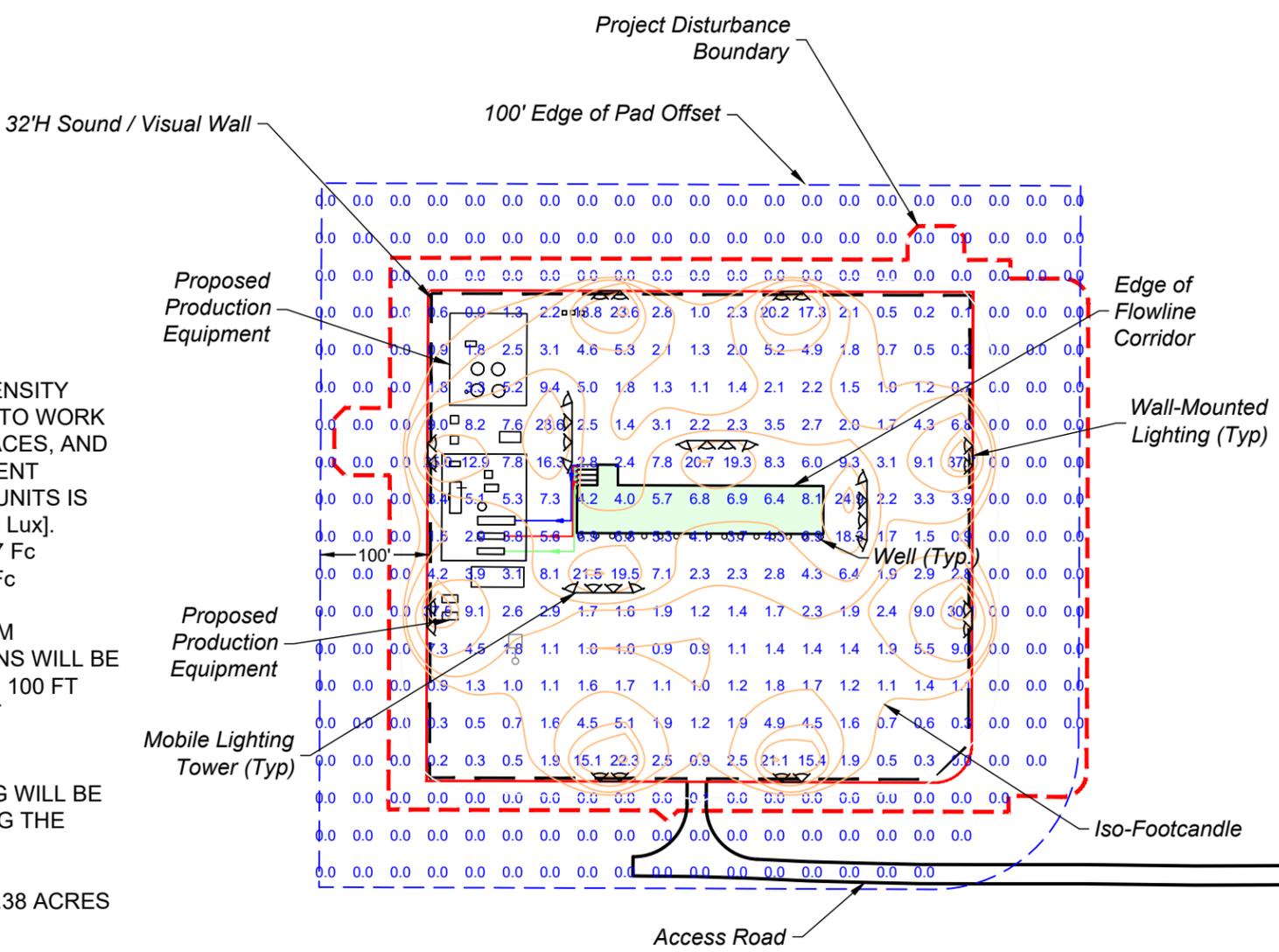


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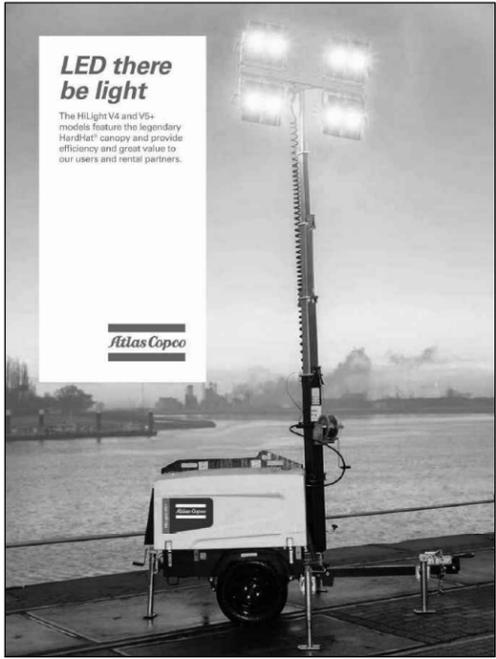
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DRILL-OUT OPERATIONS PHOTOMETRIC PLAN		

APPENDIX D – FLOWBACK OPERATIONS PHOTOMETRIC PLAN



NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
 MAXIMUM = 37.7 Fc
 MINIMUM = 0.0 Fc
2. DIRECT LIGHTING FROM FLOWBACK OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.
4. TOTAL PAD AREA = ± 5.38 ACRES



TYPICAL MOBILE TOWER LIGHTING



TYPICAL WALL MOUNTED LIGHTING

1 DRILLING PAD SITE LIGHTING PHOTOMETRIC PLAN
 SCALE: 1" = 150'

LIGHTING FIXTURE SCHEDULE									
SYMBOL	LIGHT UNIT DESCRIPTION	BUG RATING	MOUNTING INFO	VOLTS	LAMP QUANTITY	LUMENS / LAMP	UNITS QUANTITY	LUMENS / UNIT	TOTAL LUMENS
	4 HEAD FLOOD LIGHT LED MOBILE TEMPORARY LIGHTING TOWER	B3-U3-G5	25' TOWER	120	4	38,500	5	154,000	770,000
	2 HEAD LED FLOOD LIGHTS, WALL MOUNTED	B3-U3-G5	25' WALL	120	2	45,171	8	90,342	722,736



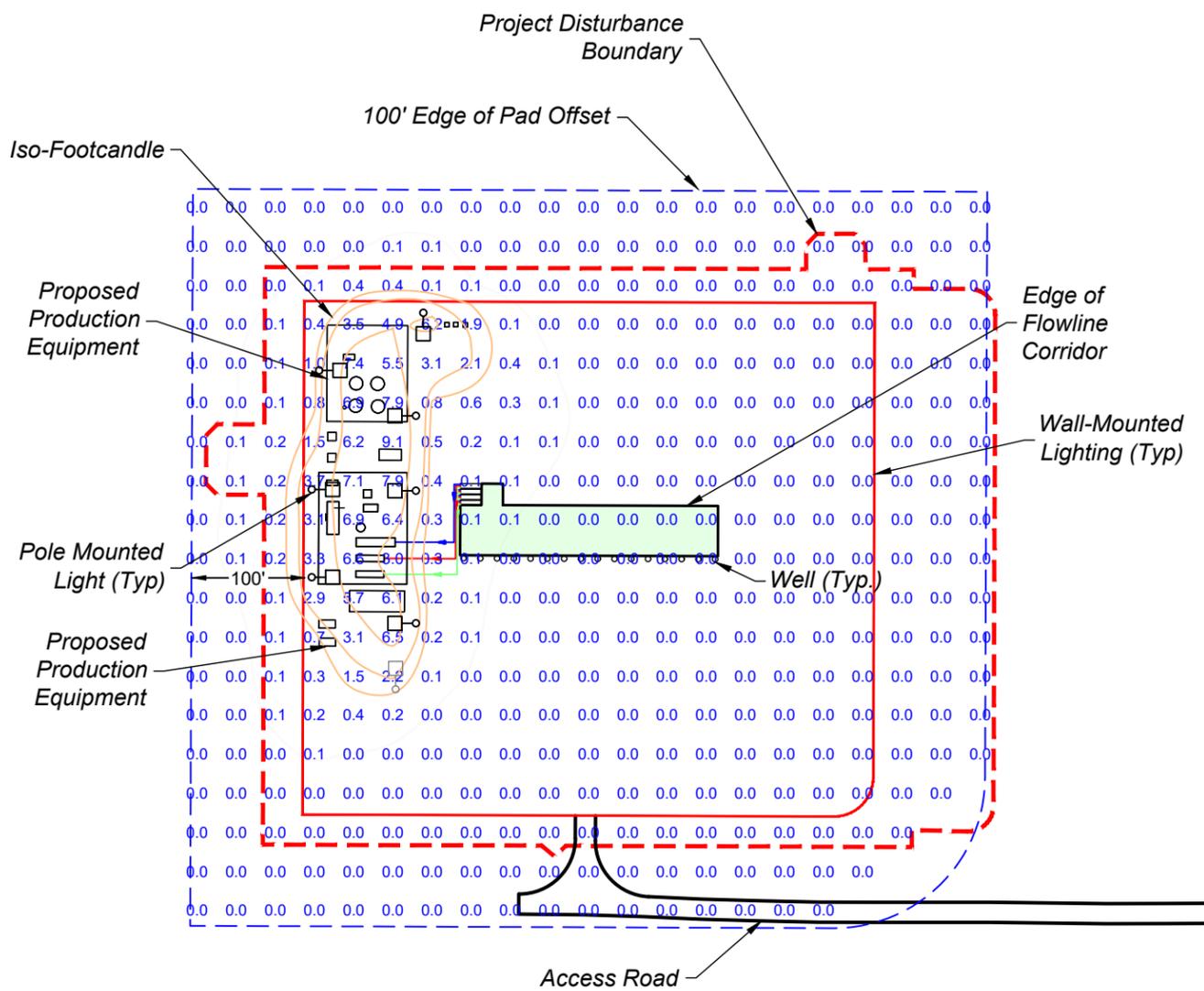
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FLOWBACK OPERATIONS PHOTOMETRIC PLAN

APPENDIX E – PRODUCTION OPERATIONS PHOTOMETRIC PLAN



NOTES:

1. MEASURED LIGHT INTENSITY LEVEL WITH RESPECT TO WORK AREAS, OUTDOOR SPACES, AND UNATTENDED EQUIPMENT AREAS. ILLUMINANCE UNITS IS GIVEN IN Fc [1 fc = 10.8 Lux].
 MAXIMUM = 9.1 Fc
 MINIMUM = 0.0 Fc
2. DIRECT LIGHTING FROM PRODUCTION OPERATIONS WILL BE CONFINED WITHIN THE 100 FT EDGE OF PAD OFF-SET BOUNDARY.
3. DRILLING RIG LIGHTING WILL BE PRESENT ONLY DURING THE DRILLING PHASE.
4. TOTAL PAD AREA = ± 5.38 ACRES



TYPICAL POLE MOUNTED LIGHTING

1 DRILLING PAD SITE LIGHTING PHOTOMETRIC PLAN
 SCALE: 1" = 150'

LIGHTING FIXTURE SCHEDULE									
SYMBOL	LIGHT UNIT DESCRIPTION	BUG RATING	MOUNTING INFO	VOLTS	LAMP QUANTITY	LUMENS / LAMP	UNITS QUANTITY	LUMENS / UNIT	TOTAL LUMENS
☐	1 HEAD LED FLOOD LIGHT, POLE MOUNTED, EX. FACILITIES	B4-U0-G5	25' POLE	120	1	43,737	7	43,737	306,159



UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SCALE: AS NOTED	DRAWN BY: S.G.T.	DATE DRAWN: 11-07-2022
UELS FILE NO.: P - 2 0 3 9	REVISED:	

PRODUCTION OPERATIONS PHOTOMETRIC PLAN

APPENDIX F – LIGHT FIXTURE SPECIFICATION SHEETS



HiLight V4 S

HiLight V5+ S

The HiLight V4 S and V5+ S light towers are perfect for multiple applications. For the ultimate in fuel economy and reliability, the LED HiLight V5+ is our premium offering. Its LED lighting technology provides a wide range of benefits and represents outstanding lifetime value for our customers. The second model, the HiLight V4 is the leading solution within the 4000W metal halide light tower segment. Both models offer assured robustness and extended safety features.



LED
4 x 350 W

LIGHT
COVERAGE
43,055 ft²
AVG. 20LUXES

LIFE SPAN
6,000 Hrs
METAL HALIDE

0.56 g/h



Manual vertical mast

HardHat[®] technology

Spillage free frame

LIGHT
COVERAGE
53,819 ft²
AVG. 20LUXES

LIFE SPAN
50,000 Hrs
LED

0.185 g/h



	BATTERY	DIESEL				ELECTRIC		
	HiLight Z3+	HiLight B5+	HiLight V5+ S	HiLight V4 S	HiLight V4W	HiLight E3+	HiLight P2+	HiLight V2+ V3+

Light coverage ft ²	
Lamps	
Mast	
Features	

		32,292 (average 10 luxes)	53,819 (average 20 luxes)	53,819 (average 20 luxes)	43,055 (average 20 luxes)	43,055 (average 20 luxes)	32,292 (average 10 luxes)	21,527 (average 10 luxes)	21,527 (average 10 luxes)
		LED	LED	LED	Metal halide	Metal halide	LED	LED	LED
		Vertical Hydraulic Battery Powered Noise & CO2 free	Vertical Hydraulic Compact box	Vertical manual HardHat® canopy	Vertical manual HardHat® canopy	Vertical manual HardHat® canopy	Vertical manual Electric	Vertical manual Electric	Vertical manual Electric

Performance data	
Rated frequency	Hz
Rated voltage	VAC
Rated power (PRP)	kW
Operating temperature (min/max)	°F (°C)
Sound power level (LwA)	dB(A)
Sound pressure level (LpA) at 7m	dB(A)

Rated frequency	Hz	60	60	60	60	60	60	60	60
Rated voltage	VAC	120	120	120	120	120-240	120	120	120
Rated power (PRP)	kW	-	2.7	2.7	6.8	8	-	-	-
Operating temperature (min/max)	°F (°C)	-4/ 122 (-20/ 50)	-4/ 104 (-20/ 40)	-13 / 122 (-25 / 50)	-13 / 122 (-25 / 50)	-13 / 122 (-25 / 50)	-	-	-
Sound power level (LwA)	dB(A)	-	82	86	94	89	-	-	-
Sound pressure level (LpA) at 7m	dB(A)	-	55	63	73	64	-	-	-

Engine	
Model	
Speed	rpm
Rated net output (PRP)	kW
Coolant	
Number of cylinders	

Model		-	Kubota Z481	Kubota Z482	Kubota Z482	Kubta D1105	-	-	-
Speed	rpm	-	1800	1800	3600	1800	-	-	-
Rated net output (PRP)	kW	-	3	3	8.1	10	-	-	-
Coolant		-	Water	Water	Water	Water	-	-	-
Number of cylinders		-	1	2	2	3	-	-	-

Alternator	
Model	
Rated output	kVA
Insulation / Enclosure protection	class / IP

Model		-	Meccalte LT3/74	Meccalte LT3/75	Sincro EK 2 MCT	DP06/AG164	-	-	-
Rated output	kVA	-	3.5	4.5	7.5	8	-	-	-
Insulation / Enclosure protection	class / IP	-	H / 20	H / 21	H / 23	H / 23	-	-	-

Fuel consumption	
Fuel tank capacity	gallon (l)
Autonomy	h

Fuel tank capacity	gallon (l)	-	34.3 (230)	28 (105)	28 (105)	42 (160)	-	-	-
Autonomy	h	18-32	220	150	50	90	-	-	-

Power output	
Auxiliary Power	W
Outlets	

Auxiliary Power	W	-	1,200	1,200	2,400	7,200	-	-	-
Outlets		-	120 VAC, 10A, GFCI Duplex (NEMA 5-20R)	120 VAC, 10A, GFCI Duplex (NEMA 5-20R)	120 VAC, 20A, GFCI Duplex (NEMA 5-20R)	121 VAC, 20A, GFCI Duplex (NEMA 5-20R) 240VAC, 30A, TL (NEMA L5-30R)	-	-	-

Lights	
Floodlights	
Wattage	W
Luminous Flux	Lumen

Floodlights		LED	LED	LED	Metal halide	Metal halide	LED	LED	LED
Wattage	W	4x 160	4 x 350	4 x 350	4 x 1,000	4 x 1,000	4 x 160	320	320 4 x 120
Luminous Flux	Lumen	4 x 16,000	4 x 38,500	4 x 38,500	4 x 110,000	4 x 110,000	4 x 16,000	28,000	28,000 4 x 12,000

Mast	
Type	
Rotation	degrees
Maximum height	ft (m)
Maximum speed wind	mph (kph)

Type		Hydraulic, vertical, 5 section	Hydraulic, vertical, 5 section	Manual	Manual	Manual			
Rotation	degrees	340	340	360	360	360	0	0	0
Maximum height	ft (m)	26 (7.9)	26 (7.9)	25 (7.5)	25 (7.5)	25 (7.5)	23 (7)	11 (3.4)	17 (5)
Maximum speed wind	mph (kph)	50 (80)	50 (80)	51 (80)	51 (80)	59 (95)	52 (80)	32(50)	32 (50)

Enclosure and trailer	
Type	
Base Frame	
Enclosure	

Type		Box type Forklift pockets	Box type Forklift pockets	DOT US Compliant Unibody trailer with 4 point leveling system Spillage free frame	DOT US Compliant Unibody trailer with 4 point leveling system Spillage free frame	DOT US Compliant Unibody trailer with 4 point leveling system Spillage free frame	-	-	Trailer with Bumpers in PE
Base Frame		-	Spillage free frame	Spillage free frame	Spillage free frame	Spillage free frame	-	-	-
Enclosure		Galvanneal Steel Canopy & Powder coating painting	Galvanneal Steel Canopy & Powder coating painting	Gull-wing Hard Hat Doors	Gull-wing Hard Hat Doors	Gull-wing Hard Hat Doors	Hard Hat Canopy	-	-

Dimensions and weight	
Dimensions in transport Up-right Towbar (L x W x H)	in (m)
Dimensions in transport Towed (L x W x H)	in (m)
Weight	lb (kg)

Dimensions in transport Up-right Towbar (L x W x H)	in (m)	-	-	77 x 48 x 102 (1.95 x 1.22 x 2.59)	77 x 48 x 102 (1.95 x 1.22 x 2.59)	74 x 53 x 98 (1.88 x 1.34 x 2.49)	-	-	-
Dimensions in transport Towed (L x W x H)	in (m)	46 x 46 x 97 (1.16x 1.16x 2.46)	46 x 46 x 97 (1.16x 1.16x 2.46)	110 x 48 x 102 (2.79 x 1.22 x 2.59)	110 x 48 x 102 (2.79 x 1.22 x 2.59)	110 x 53 x 98 (2.79 x 1.34 x 2.49)	48 x 32 x 84 (1.2 x 0.8 x 2.14)	19.7 x 19.7 x 87 (0.5 x 0.5 x 2.2)	45 x 335 x 79 (1.1 x 0.85 x 2)
Weight	lb (kg)	2160(980)	2160(980)	1,768 (802)	1,970 (894)	2,041 (926)	608 (276)	99 (45)	243 (110)



IES ROAD REPORT

PHOTOMETRIC FILENAME : 350W 38500 LUMEN LED_30D.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]

[TESTLAB]

[TESTDATE]

[ISSUEDATE]

[OTHER]

[MANUFAC]

[LUMCAT] fl-350-85x135

[LUMINAIRE] fl-350-85x135

[LAMPCAT] LED

[LAMP] LED

[_CONVERT] Luminaire test position and photometric web converted from original test data

CHARACTERISTICS

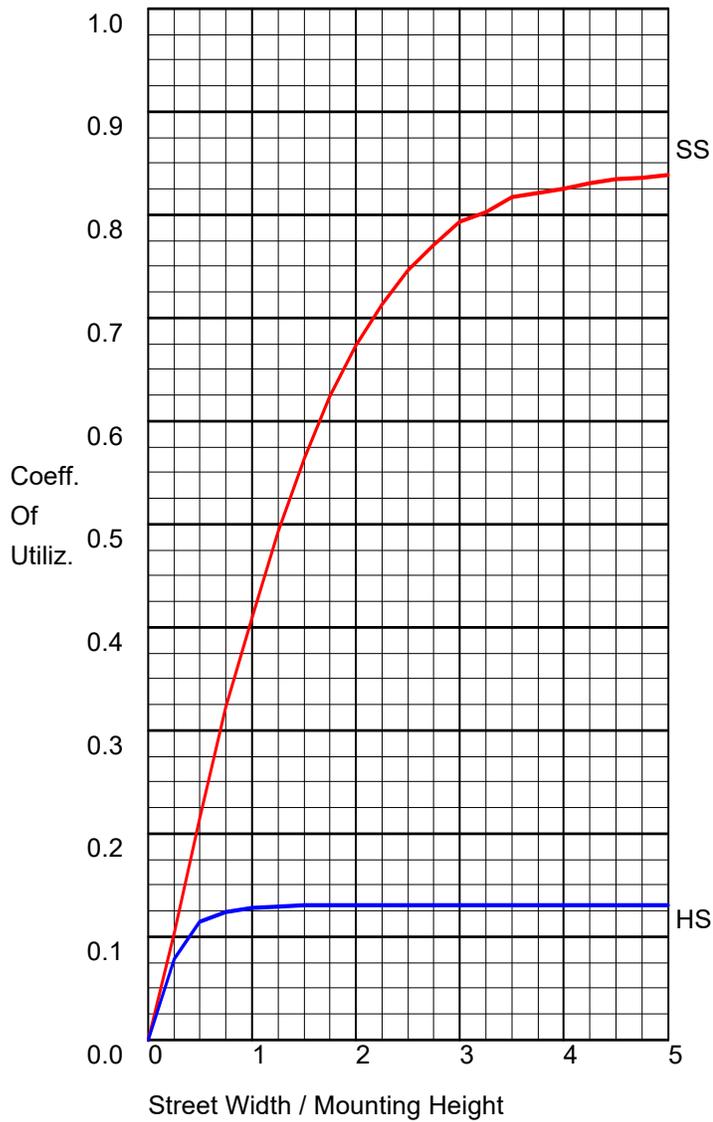
IES Classification	Type IV
Longitudinal Classification	Medium
Lumens Per Lamp	37338 (1 lamp)
Total Lamp Lumens	37338
Luminaire Lumens	37345
Downward Total Efficiency	99 %
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	386
Ballast Factor	1.00
Upward Waste Light Ratio	0.01
Maximum Candela	26112.25
Maximum Candela Angle	67.5H 70V
Maximum Candela (<90 Degrees Vertical)	26112.25
Maximum Candela Angle (<90 Degrees Vertical)	67.5H 70V
Maximum Candela At 90 Degrees Vertical	1300.775 (3.5% Lamp Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	12466.58 (33.4% Lamp Lumens)
Cutoff Classification (deprecated)	Non-Cutoff

IES ROAD REPORT
PHOTOMETRIC FILENAME : 350W 38500 LUMEN LED_30D.IES

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	2894.2	7.8	7.8
FM - Front-Medium (30-60)	13146.5	35.2	35.2
FH - Front-High (60-80)	15017.0	40.2	40.2
FVH - Front-Very High (80-90)	866.9	2.3	2.3
BL - Back-Low (0-30)	1604.2	4.3	4.3
BM - Back-Medium (30-60)	2657.2	7.1	7.1
BH - Back-High (60-80)	606.9	1.6	1.6
BVH - Back-Very High (80-90)	18.3	0.0	0.0
UL - Uplight-Low (90-100)	353.2	0.9	0.9
UH - Uplight-High (100-180)	180.1	0.5	0.5
Total	37344.5	99.9	100.0
BUG Rating	B3-U3-G5		

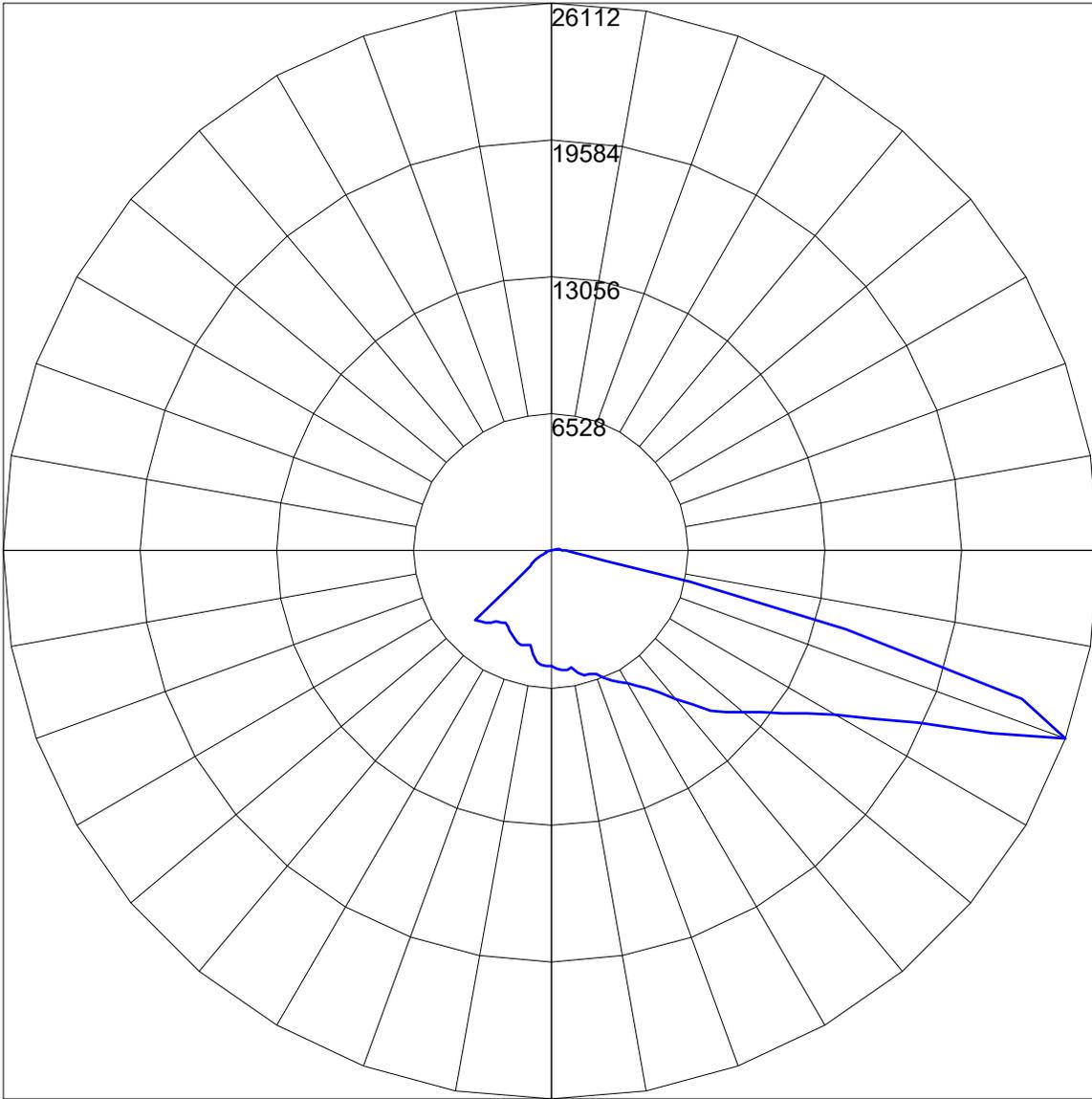
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

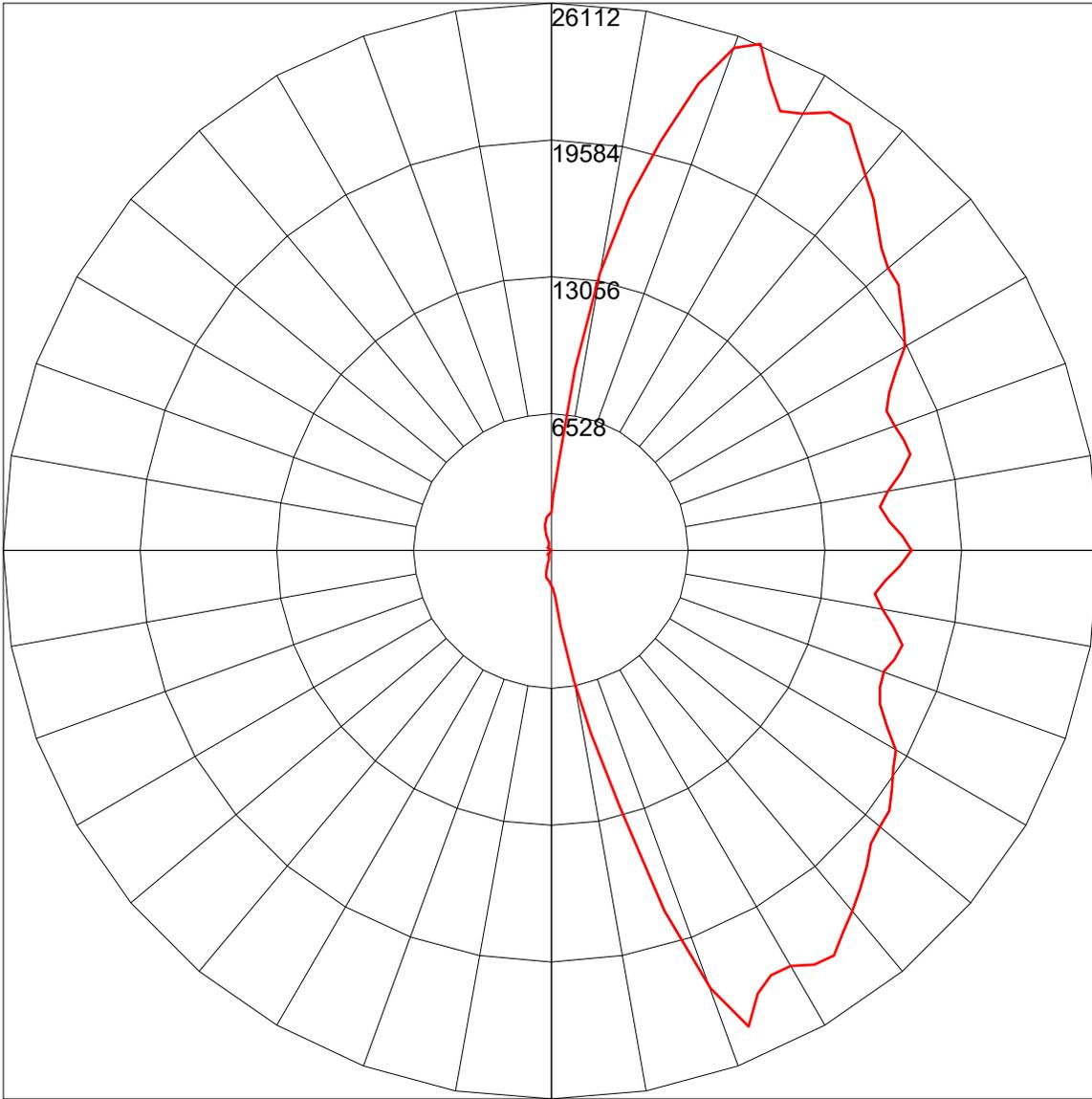
	Lumens	Percent Of Lamp
Downward Street Side	31924.7	85.5
Downward House Side	4886.6	13.1
Downward Total	36811.3	98.6
Upward Street Side	533.0	1.4
Upward House Side	0.3	0.0
Upward Total	533.3	1.4
Total Flux	37344.6	100.0

POLAR GRAPH



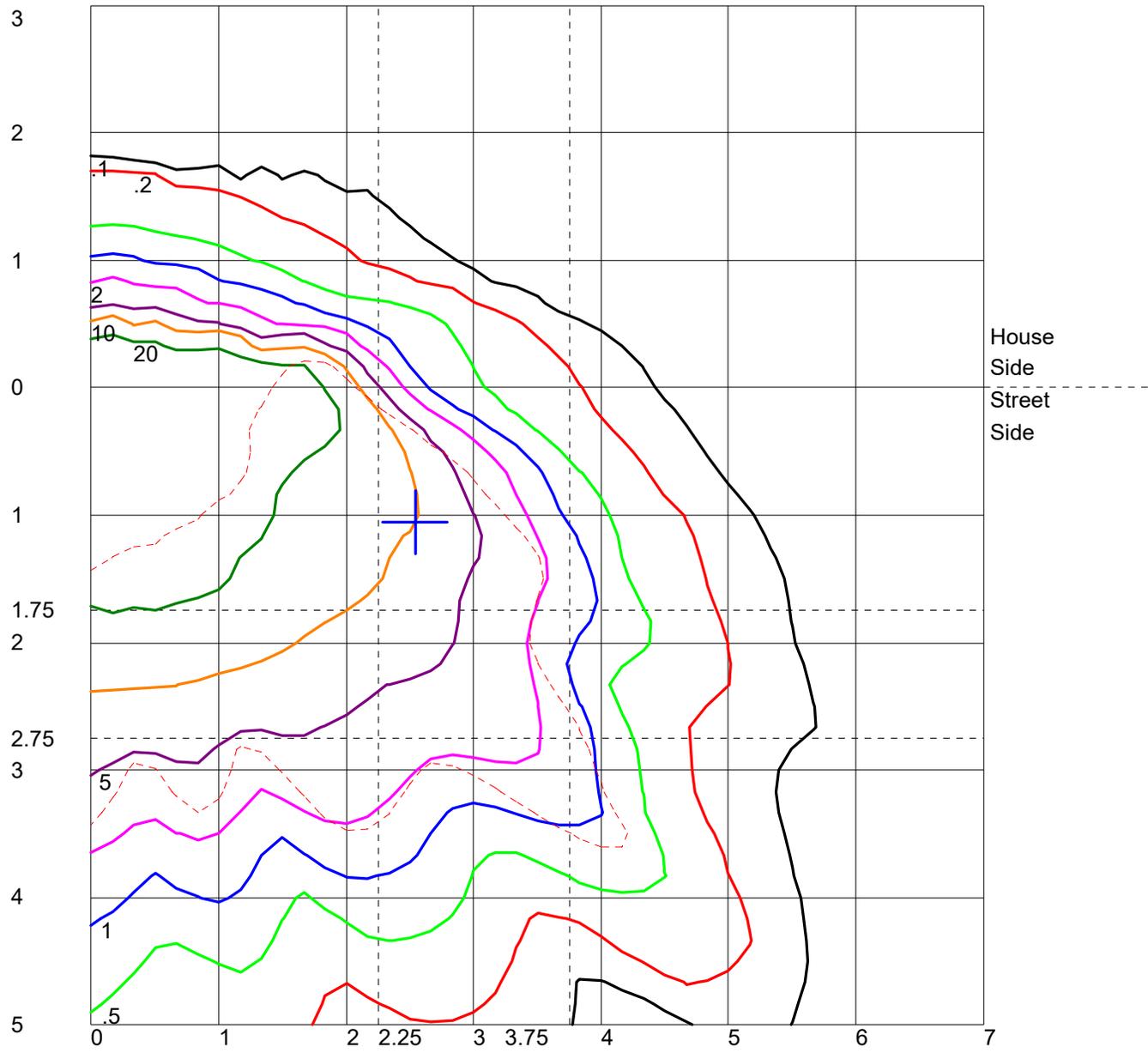
Maximum Candela = 26112.25 Located At Horizontal Angle = 67.5, Vertical Angle = 70
Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)

POLAR GRAPH



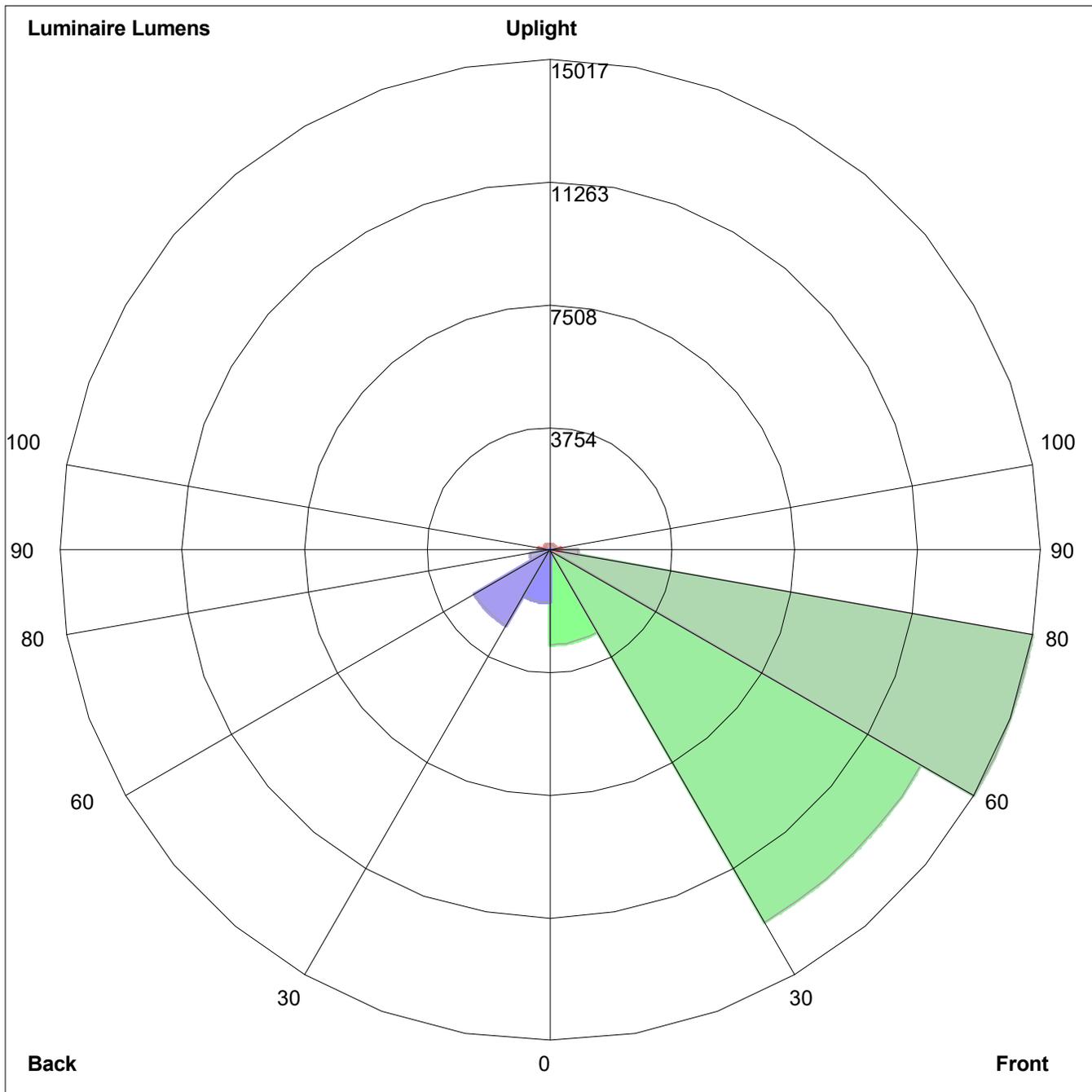
Maximum Candela = 26112.25 Located At Horizontal Angle = 67.5, Vertical Angle = 70
Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
 Values Based On 10 Foot Mounting Height
 1/2 Maximum Candela Trace Shown As Dashed Curve
 (+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
 Front: Low=2894.2, Medium=13146.5, High= 15017.0, Very High=866.9
 Back: Low=1604.2, Medium=2657.2, High=606.9, Very High=18.3
 Uplight: Low=353.2, High=180.1

BUG Rating : B3-U3-G5



Ultra high output, high efficiency LED floodlight with NEMA Types: 7H x 6V, 6H x 4V, 4H x 6V, 5H x 5V and 3H x 3V. patent-pending "Air-Flow" technology ensures long LED and driver lifespan. Use for general and security lighting for large areas, building façades, signs and landscapes.

Color: Bronze

Weight: 66.1 lbs

Project:

Type:

Prepared By:

Date:

Driver Info

Type	Constant Current
120V	2.65A
208V	1.59A
240V	1.38A
277V	1.17A
Input Watts	325.9W

LED Info

Watts	300W
Color Temp	5000K (Cool)
Color Accuracy	72 CRI
L70 Lifespan	100,000 Hours
Lumens	45,171
Efficacy	138.6 lm/W

Technical Specifications

Compliance

UL Listed:

Suitable for wet locations. Suitable for ground mounting.

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

Optical

NEMA Type:

NEMA Beam Spread of 7H x 6V

Performance

Lifespan:

100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

Construction

IP Rating:

Ingress Protection rating of IP66 for dust and water

Maximum Ambient Temperature:

Suitable for use in up to 40°C (104°F)

Effective Projected Area:

EPA = 4

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Lens:

Tempered glass lens

Housing:

Die-cast aluminum housing and door frame

Mounting:

Heavy-duty slipfitter for 2 3/8"OD pipe

Reflector:

Specular and semi-specular vacuum-metalized polycarbonate

Gaskets:

High-temperature silicone gaskets

Technical Specifications (continued)

Construction

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

Tilt Increment:

Rotates in 6 degree increments

LED Characteristics

LEDs:

Multip-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:

RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Electrical

Drivers:

Constant Current, 1050mA, 50/60 Hz, 120-277V, 4 kV surge protection, 120V: 2.65A, 208V: 1.59A, 240V: 1.38A, 277V: 1.17A, THD <20%, Power Factor: 99%

THD:

9.26% at 120V, 12.56% at 277V

Power Factor:

99.3% at 120V, 96.6% at 277V

Note:

All values are typical (tolerance +/- 10%)

Other

Equivalency:

Equivalent to 1000W Metal Halide

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Buy American Act Compliance:

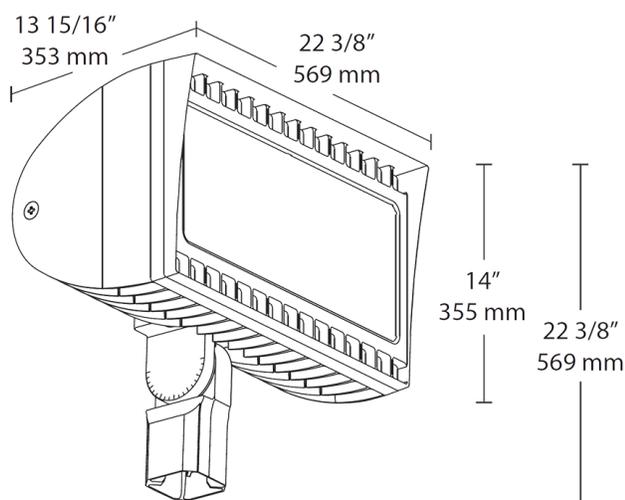
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Listings

DLC Listed:

This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities. DLC Product Code: PF5PMFXJ

Dimensions



Features

- 300W replaces 1000 MH floodlights
- 100,000-hour LED lifespan
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Wattage	Mounting	Color Temp	NEMA Type	Finish	Driver Options	Options	Other Options
FXLED	300	SF						
	200 = 200W 300 = 300W	SF = Slipfitter T = Trunnion	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm)	Blank = 7H x 6V B64 = 6H x 4V B55 = 5H x 5V B33 = 3H x 3V B46 = 4H x 6V	Blank = Bronze W = White	Blank = 120-277V /480 = 480V /BL = Bi-Level (Slipfitters only) ¹ /D10 = 0-10V Dimming	Blank = No option /PCS = 120V Swivel /PCS2 = 277V Swivel /PCT = 120-277V Twistlock /PCT4 = 480V Twistlock /PCS4 = 480V Swivel /LC = Lightcloud® Controller	USA = BAA Compliant Blank = Standard

¹ Slipfitter models only



IES ROAD REPORT
PHOTOMETRIC FILENAME : RABFXLED300SF_30D.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] DLF20180512001-1a
 [TESTLAB] Deliver Co. Ltd.
 [MANUFAC] RAB LIGHTING INC. RC LIGHTING
 [ISSUEDATE] 05/12/18
 [_ CONVERT] Luminaire test position and photometric web converted from original test data

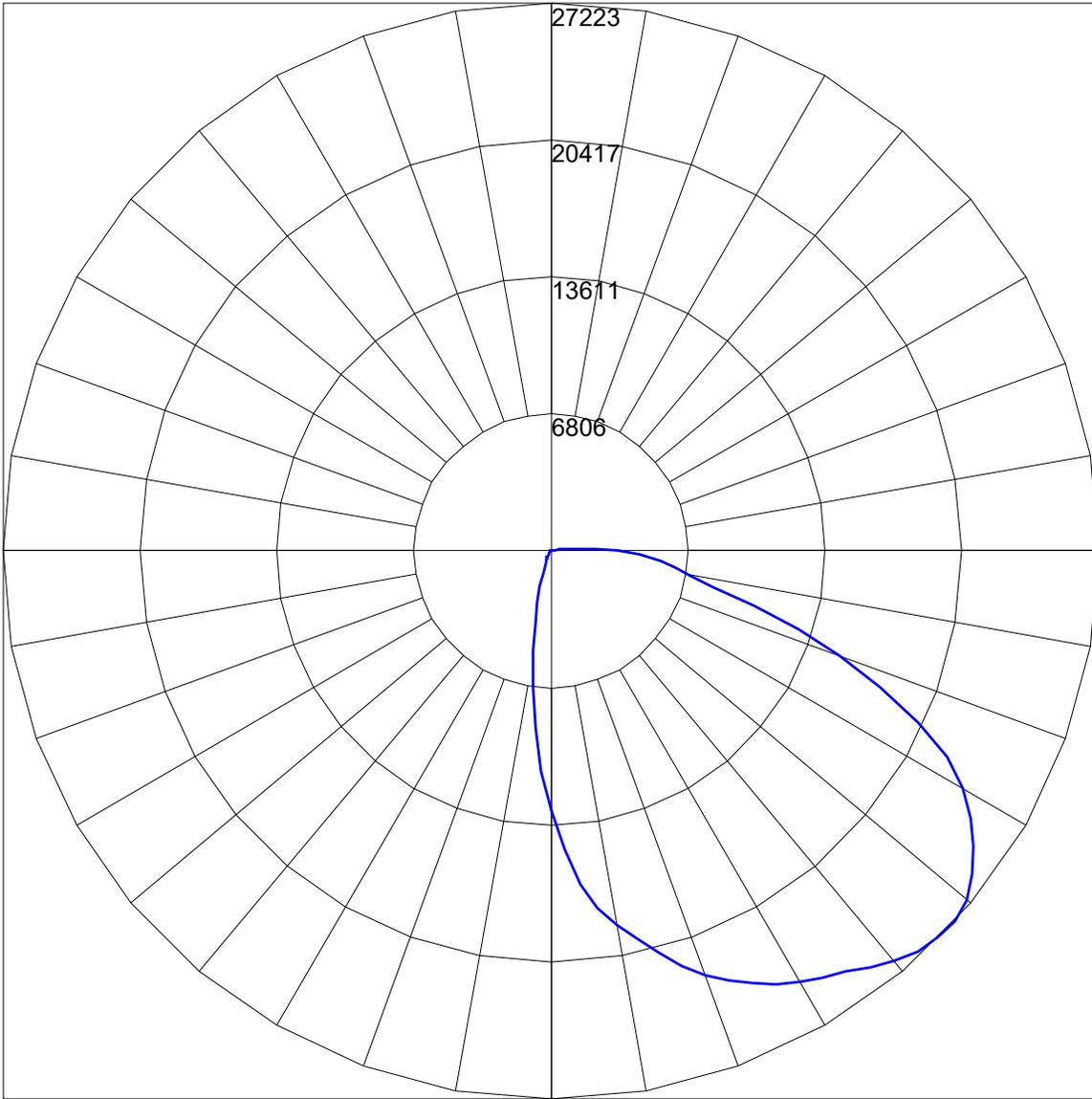
CHARACTERISTICS

IES Classification	Type IV
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	45134
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	138
Total Luminaire Watts	325.921
Ballast Factor	1.00
Upward Waste Light Ratio	0.01
Maximum Candela	27222.949
Maximum Candela Angle	360H 47.5V
Maximum Candela (<90 Degrees Vertical)	27222.949
Maximum Candela Angle (<90 Degrees Vertical)	360H 47.5V
Maximum Candela At 90 Degrees Vertical	3383.779 (7.5% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	7519.438 (16.7% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

LUMINAIRE CLASSIFICATION SYSTEM (LCS)

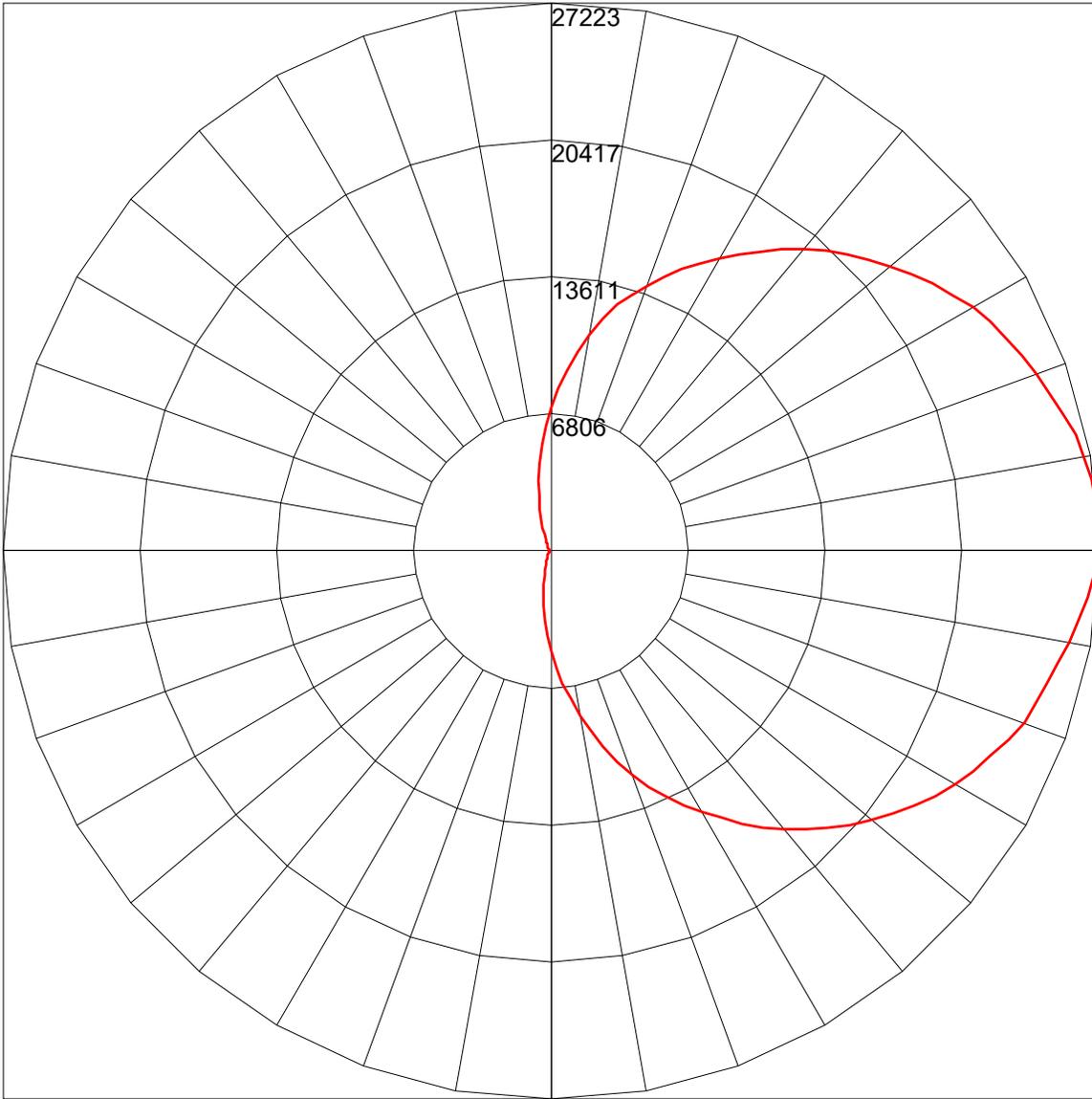
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	7859.9	N.A.	17.4
FM - Front-Medium (30-60)	21395.0	N.A.	47.4
FH - Front-High (60-80)	10409.2	N.A.	23.1
FVH - Front-Very High (80-90)	1598.0	N.A.	3.5
BL - Back-Low (0-30)	2114.1	N.A.	4.7
BM - Back-Medium (30-60)	1264.3	N.A.	2.8
BH - Back-High (60-80)	112.0	N.A.	0.2
BVH - Back-Very High (80-90)	3.2	N.A.	0.0
UL - Uplight-Low (90-100)	305.4	N.A.	0.7
UH - Uplight-High (100-180)	72.5	N.A.	0.2
Total	45133.6	N.A.	100.0
BUG Rating	B3-U3-G5		

POLAR GRAPH



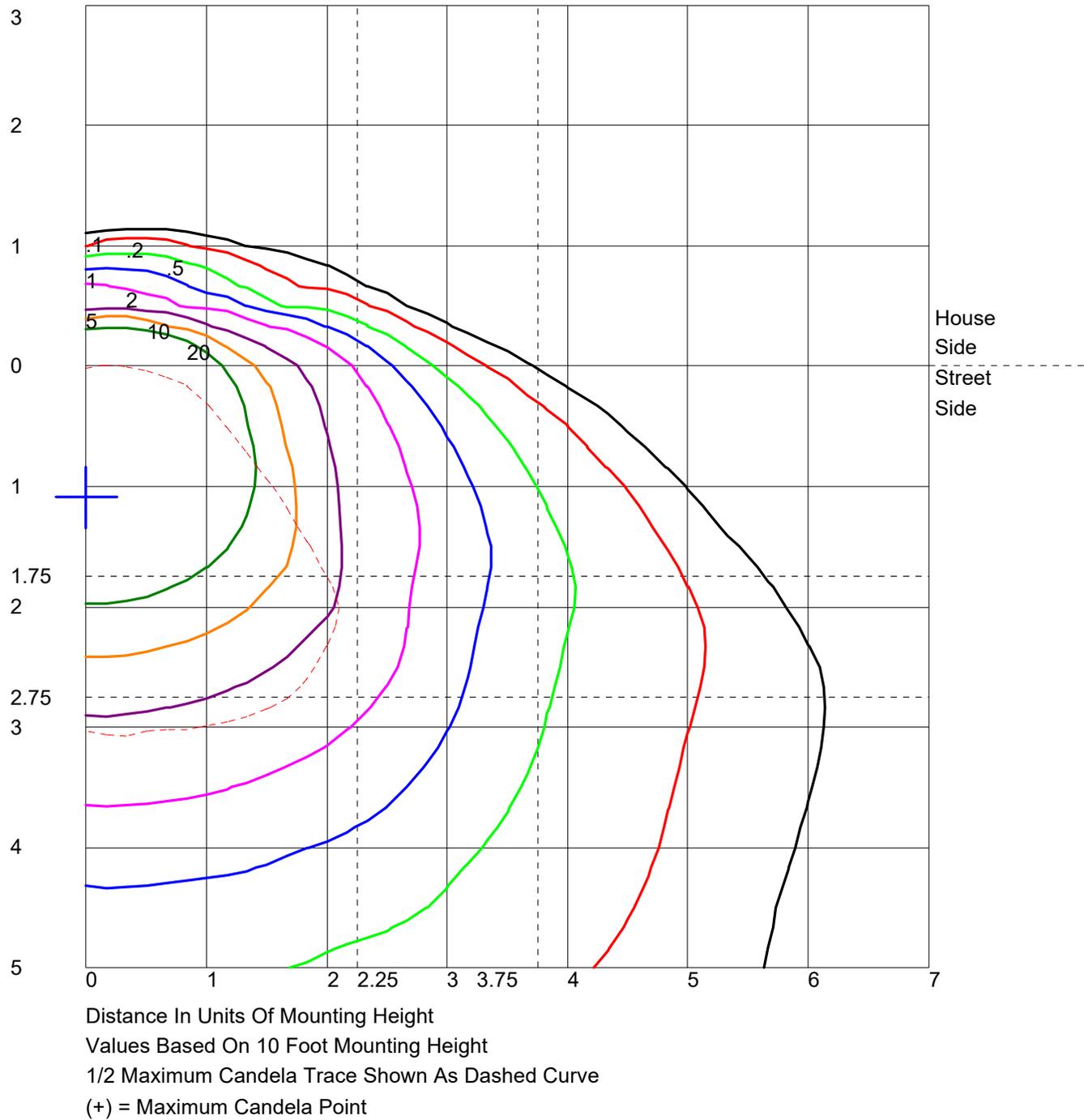
Maximum Candela = 27222.949 Located At Horizontal Angle = 360, Vertical Angle = 47.5
Vertical Plane Through Horizontal Angles (360 - 180) (Through Max. Cd.)

POLAR GRAPH

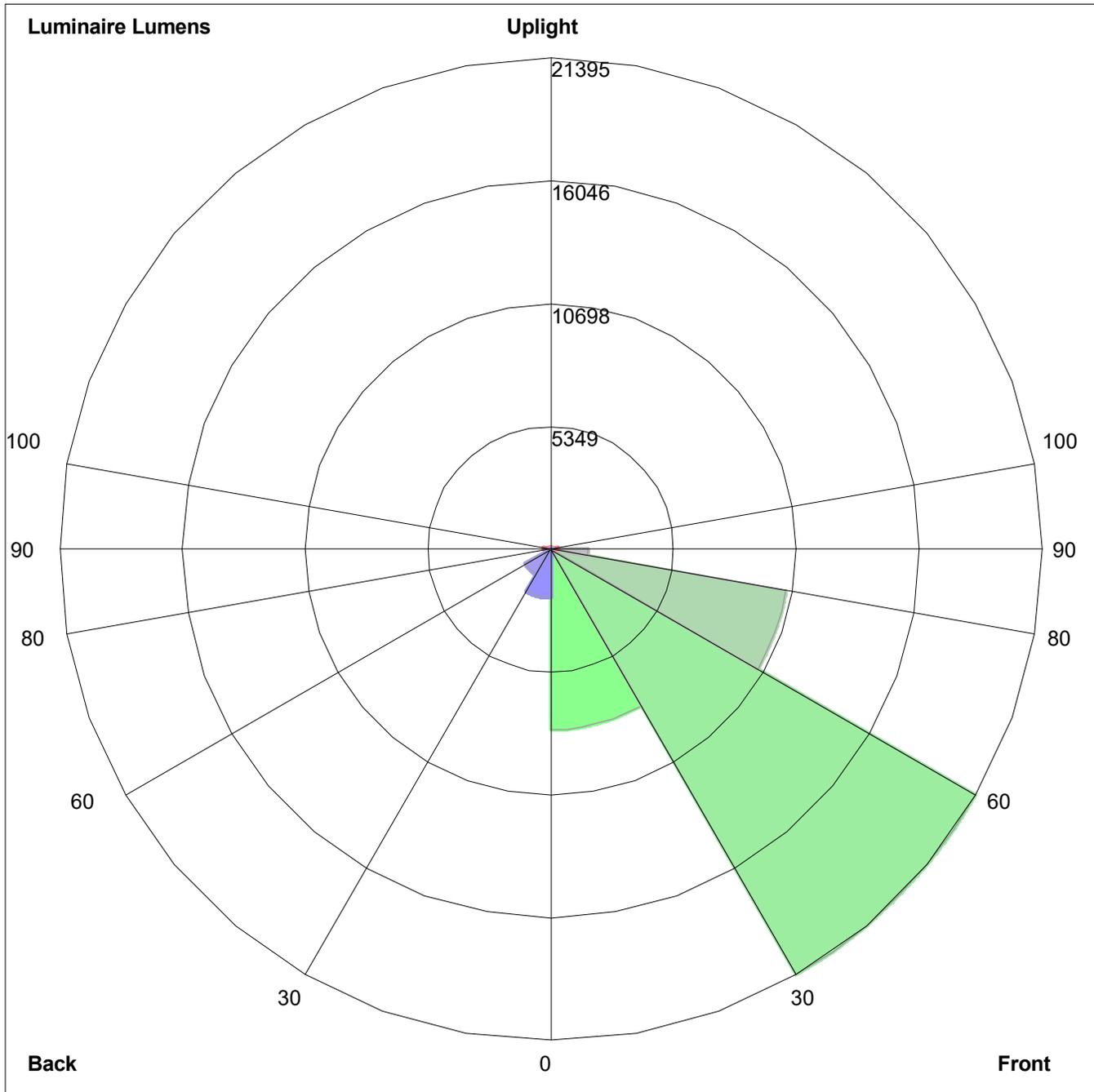


Maximum Candela = 27222.949 Located At Horizontal Angle = 360, Vertical Angle = 47.5
Horizontal Cone Through Vertical Angle (47.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=7859.9, Medium= 21395.0, High=10409.2, Very High= 1598.0
Back: Low=2114.1, Medium=1264.3, High=112.0, Very High=3.2
Uplight: Low=305.4, High=72.5

BUG Rating : B3-U3-G5

Job Name:

Providence Energy LTD - Well Pad - Lighting

Catalog Number:SLM LED 42L SIL FT UNV DIM 40
70CRI PCI(VOLTAGE)BRZ IL

Notes:

Type:**SITE**

FLC21-10453



Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Slice Medium (SLM)

Outdoor LED Area Light



IP66

**OVERVIEW**

Lumen Package	9,000 - 48,000
Wattage Range	63 - 401
Efficacy Range (LPW)	112 - 156
Weight lbs(kg)	30 (13.6)

QUICK LINKS
[Ordering Guide](#)
[Performance](#)
[Photometrics](#)
[Dimensions](#)
FEATURES & SPECIFICATIONS**Construction**

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 37 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 5W, FT, FTA and AM.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377. Also available in phosphor converted amber with peak intensity at 610nm.
- Minimum CRI of 70
- Integral louver (IL) and house-side shield (IH) options available for improved backlight control without sacrificing street side performance. See page 3 for more details.

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L80 Calculated Life: >100k Hours (See Lumen Maintenance on Page 5)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 42L and 48L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern. (See drawing on page 9)

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to <https://www.lsiindustries.com/resources/terms-and-warranty.aspx> for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications applications are qualified.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- Patented Silicone Optics (US Patent NO. 10,816,165 B2)



Submitted by FISHER LIGHTING AND CONTROLS		Catalog Number: SLM LED 42L SIL FT UNV DIM 40 70CRI PCI(VOLTAGE)BRZ IL	Type: SITE
 FISHER LIGHTING AND CONTROLS	Job Name: Providence Energy LTD - Well Pad - Lighting	Notes:	FLC21-10453



Type: _____

Slice Medium Outdoor LED Area Light

ORDERING GUIDE

[Back to Quick Links](#)

TYPICAL ORDER EXAMPLE: **SLM LED 36L SIL FTA UNV DIM 50 70CRI ALSCS04 BRZ IL**

Luminaire Prefix	Light Source	Lumen Package	Light Output	Distribution	Orientation ²	Voltage	Driver
SLM - Slice Medium	LED	9L - 9,000 lms 12L - 12,000 lms 18L - 18,000 lms 24L - 24,000 lms 30L - 30,000 lms 36L - 36,000 lms 42L - 42,000 lms 48L - 48,000 lms Custom Lumen Packages ¹	SIL - Silicone	2 - Type 2 3 - Type 3 5W - Type 5 Wide FT - Forward Throw FTA - Forward Throw Automotive AM - Automotive Merchandise	(blank) - standard (no rotation) L - Optics rotated left 90° R - Optics rotated right 90°	UNV - Universal Voltage (120-277V) HV - High Voltage (347-480V)	DIM - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT 40 - 4,000 CCT 30 - 3,000 CCT AMB - Phosphor Converted Amber ¹²	70CRI - 70 CRI	(Blank) - None Wireless Controls System ALSC - AirLink Synapse Control System ALSCS02 - AirLink Synapse Control System with 12-20' Motion Sensor ALSCS04 - AirLink Synapse Control System with 20-40' Motion Sensor ALBCS1 - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' mounting height) ⁴ ALBCS2 - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' mounting height) ⁴ Stand-Alone Controls EXT - 0-10V Dimming leads extended to housing exterior CR7P - 7 Pin Control Receptacle ANSI C136.41 ⁶ IMSBT1 - Integral Bluetooth™ Motion and Photocell Sensor max 8-24' mounting height ^{4,5} IMSBT2 - Integral Bluetooth™ Motion and Photocell Sensor max 25-40' mounting height ^{4,5} Button Type Photocells PCI120 - 120V PCI208-277 - 208 -277V PCI347 - 347V	BLK - Black BRZ - Dark Bronze GMG - Gun Metal Gray GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	(Blank) - None IH - Integral Houseside Shield ² IL - Integral Louver (Sharp Spill Light Cutoff) ²

Accessories Ordering Information⁷

Controls Accessories	
Description	Order Number
Twist Lock Photocell (120V) for use with CR7P ⁸	122514
Twist Lock Photocell (208-277) for use with CR7P ⁸	122515
Twist Lock Photocell (347V) for use with CR7P ⁸	122516
Twist Lock Photocell (480V) for use with CR7P ⁸	1225180
AirLink 5 Pin Twist Lock Controller ⁸	61409
AirLink 7 Pin Twist Lock Controller ⁸	661410
Pole-Mounted Occupancy Sensor (24V)	663284CLR ⁹
Shorting Cap for use with CR7P ⁸	14932

Fusing Accessories ¹¹	
Description	Order Number
Single Fusing (120V)	FK120
Single Fusing (277V)	FK277
Double Fusing (208V, 240V)	DFK240
Double Fusing (480V)	DFK480
Double Fusing (347V)	DFK347

Mounting Accessories ⁹	
Description	Order Number
Round Pole Adapter (3" Round/Tapered Poles)	408273CLR
Round Pole Adapter (4" Round Poles)	379967CLR
Round Pole Adapter (5" Round Poles)	379968CLR
Universal Mounting Bracket	684616CLR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	688138CLR
Quick Mount Pole Bracket (Square Pole)	687073CLR
Quick Mount Pole Bracket (4-5" Round Pole)	689903CLR
15 Tilt Quick Mount Pole Bracket (Square Pole)	688003CLR
15 Tilt Quick Mount Pole Bracket (4-5" Round Pole)	689905CLR
Wall Mount Bracket	382132CLR
Wood Pole Bracket (6" Minimum Pole Diameter)	751219CLR

Shielding & Miscellaneous Accessories	
Description	Order Number
Integral Louver/Shield	690981
Internal Houseside Shield	743415
10' Linear Bird Spike Kit (6' Recommended per Luminaire)	736795

FOOTNOTES:

1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Consult factory for availability.
4. Not available in HV.
5. IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store. Consult Factory for 347-480V.

6. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
7. Accessories are shipped separately and field installed.
8. Fusing must be located in hand hole of pole.
9. "CLR" denotes finish. See Finish options.
10. Only available with ALSC/ALSCH control options.
11. Fusing must be located in hand hole of pole.
12. Only available in 9L and 12L Lumen Packages. Consult factory for lead time and availability.



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SPEC.1023.A.0420

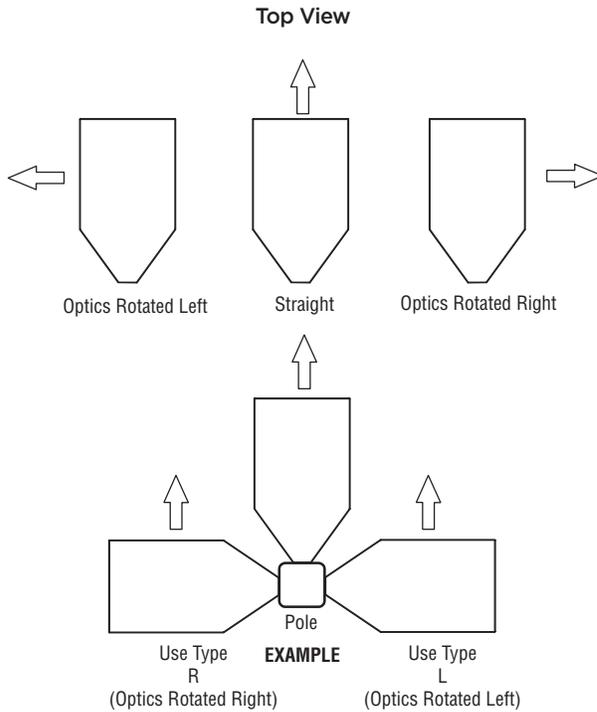


Type: _____

Slice Medium Outdoor LED Area Light

OPTICS ROTATION

ACCESSORIES/OPTIONS



Integral Louver (IL) and House-Side Shield (IH)

Accessory louver and shield available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (L) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.

Luminaire Shown with Integral Louver (IL)



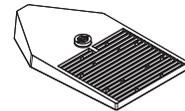
Luminaire Shown with IMSBT Option



7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Fixture Shown with CR7P





Type: _____

Slice Medium Outdoor LED Area Light

PERFORMANCE

[Back to Quick Links](#)

Delivered Lumens*												
Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
9L	2	70	9411	149	B2-U0-G2	9603	152	B2-U0-G2	9603	152	B2-U0-G2	63
	3		9548	152	B2-U0-G2	9743	155	B2-U0-G2	9743	155	B2-U0-G2	
	5W		9261	147	B3-U0-G2	9450	150	B3-U0-G2	9450	150	B3-U0-G2	
	FT		9464	150	B2-U0-G2	9657	153	B2-U0-G2	9657	153	B2-U0-G2	
	FTA		9531	151	B2-U0-G2	9725	154	B2-U0-G2	9725	154	B2-U0-G2	
	AM		9649	153	B2-U0-G1	9845	156	B2-U0-G1	9845	156	B2-U0-G1	
12L	2	70	12533	147	B3-U0-G2	12788	150	B3-U0-G2	12788	150	B3-U0-G2	85
	3		12714	150	B2-U0-G2	12974	153	B2-U0-G2	12974	153	B2-U0-G2	
	5W		12333	145	B4-U0-G2	12584	148	B4-U0-G2	12584	148	B4-U0-G2	
	FT		12603	148	B2-U0-G2	12861	151	B2-U0-G2	12861	151	B2-U0-G2	
	FTA		12692	149	B3-U0-G2	12950	152	B3-U0-G2	12950	152	B3-U0-G2	
	AM		12848	151	B3-U0-G1	13111	154	B3-U0-G2	13111	154	B3-U0-G2	
18L	2	70	18421	136	B3-U0-G3	18797	139	B3-U0-G3	18797	139	B3-U0-G3	135
	3		18691	138	B3-U0-G3	19072	141	B3-U0-G3	19072	141	B3-U0-G3	
	5W		18128	134	B4-U0-G2	18498	137	B4-U0-G2	18498	137	B4-U0-G2	
	FT		18526	137	B3-U0-G3	18904	140	B3-U0-G3	18904	140	B3-U0-G3	
	FTA		18656	138	B3-U0-G3	19037	141	B3-U0-G3	19037	141	B3-U0-G3	
	AM		18886	140	B3-U0-G2	19271	143	B3-U0-G2	19271	143	B3-U0-G2	
24L	2	70	24847	141	B4-U0-G3	25354	144	B4-U0-G3	25354	144	B4-U0-G3	176
	3		25210	143	B3-U0-G4	25724	146	B3-U0-G4	25724	146	B3-U0-G4	
	5W		24451	139	B5-U0-G3	24950	142	B5-U0-G3	24950	142	B5-U0-G3	
	FT		24987	142	B3-U0-G4	25497	145	B3-U0-G4	25497	145	B3-U0-G4	
	FTA		25162	143	B4-U0-G3	25676	146	B4-U0-G3	25676	146	B4-U0-G3	
	AM		25473	145	B3-U0-G2	25993	148	B3-U0-G2	25993	148	B3-U0-G2	
30L	2	70	31109	134	B4-U0-G3	31743	137	B4-U0-G3	31743	137	B4-U0-G3	232
	3		31562	136	B4-U0-G4	32206	139	B4-U0-G4	32206	139	B4-U0-G4	
	5W		30612	132	B5-U0-G3	31237	135	B5-U0-G3	31237	135	B5-U0-G3	
	FT		31283	135	B4-U0-G4	31921	138	B4-U0-G4	31921	138	B4-U0-G4	
	FTA		31503	136	B4-U0-G3	32146	139	B4-U0-G3	32146	139	B4-U0-G3	
	AM		31892	137	B3-U0-G3	32543	140	B4-U0-G3	32543	140	B4-U0-G3	
36L	2	70	36846	129	B4-U0-G3	37597	131	B4-U0-G3	37597	131	B4-U0-G3	286
	3		37383	131	B4-U0-G4	38146	133	B4-U0-G4	38146	133	B4-U0-G4	
	5W		36258	127	B5-U0-G4	36998	129	B5-U0-G4	36998	129	B5-U0-G4	
	FT		37052	130	B4-U0-G4	37808	132	B4-U0-G4	37808	132	B4-U0-G4	
	FTA		37313	130	B4-U0-G4	38075	133	B4-U0-G4	38075	133	B4-U0-G4	
	AM		37774	132	B4-U0-G3	38545	135	B4-U0-G3	38545	135	B4-U0-G3	
42L	2	70	42623	121	B5-U0-G4	43492	124	B5-U0-G4	43492	124	B5-U0-G4	352
	3		43245	123	B4-U0-G5	44127	125	B4-U0-G5	44127	125	B4-U0-G5	
	5W		41943	119	B5-U0-G4	42799	122	B5-U0-G4	42799	122	B5-U0-G4	
	FT		42863	122	B4-U0-G5	43737	124	B4-U0-G5	43737	124	B4-U0-G5	
	FTA		43163	123	B5-U0-G4	44044	125	B5-U0-G4	44044	125	B5-U0-G4	
	AM		43696	124	B4-U0-G3	44588	127	B4-U0-G3	44588	127	B4-U0-G3	
48L	2	70	45975	114	B5-U0-G4	46914	116	B5-U0-G4	46914	116	B5-U0-G4	401
	3		46646	115	B4-U0-G5	47598	118	B4-U0-G5	47598	118	B4-U0-G5	
	5W		45243	112	B5-U0-G4	46166	114	B5-U0-G4	46166	114	B5-U0-G4	
	FT		46235	114	B4-U0-G5	47178	116	B4-U0-G5	47178	116	B4-U0-G5	
	FTA		46559	115	B5-U0-G4	47509	117	B5-U0-G4	47509	117	B5-U0-G4	
	AM		47134	116	B4-U0-G3	48096	119	B4-U0-G3	48096	119	B4-U0-G3	





Type: _____

Slice Medium Outdoor LED Area Light**PERFORMANCE (CONT.)**

ELECTRICAL DATA (AMPS)*						
Lumens	120V	208V	240V	277V	347V	480V
9L	0.53	0.30	0.26	0.23	0.18	0.13
12L	0.71	0.41	0.35	0.31	0.24	0.18
18L	1.13	0.65	0.56	0.49	0.39	0.28
24L	1.47	0.85	0.73	0.64	0.51	0.37
30L	1.93	1.12	0.97	0.84	0.67	0.48
36L	2.38	1.38	1.19	1.03	0.82	0.60
42L	2.93	1.69	1.47	1.27	1.01	0.73
48L	3.4	1.9	1.7	1.5	1.2	.8

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

FOOTNOTES:

- Lumen maintenance values at 25C are calculated per TM-21 based on LM-80 data and in-situ testing.
- In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times the IESNA LM-80-08 total test duration for the device under testing.
- In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times the IESNA LM-80-08 total test duration for the device under testing.

RECOMMENDED LUMEN MAINTENANCE ¹ (9-18L)					
Ambient	Initial ²	25h ²	50hr ²	75hr ²	100hr ²
0 C	100%	97%	94%	90%	87%
10 C	100%	97%	94%	90%	87%
20 C	100%	97%	94%	90%	87%
25 C	100%	97%	93%	90%	86%
30 C	100%	97%	93%	89%	86%
40 C	100%	97%	92%	88%	84%
50 C	100%	96%	91%	87%	83%

RECOMMENDED LUMEN MAINTENANCE ¹ (24-48L)					
C	0 hrs. ²	25 hrs. ²	50 hrs. ²	75 hrs. ²	100 hrs. ²
0 C - 25 C	100%	95%	89%	94%	79%
40 C	100%	94%	87%	80%	74%

PHOTOMETRICS[Back to Quick Links](#)

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

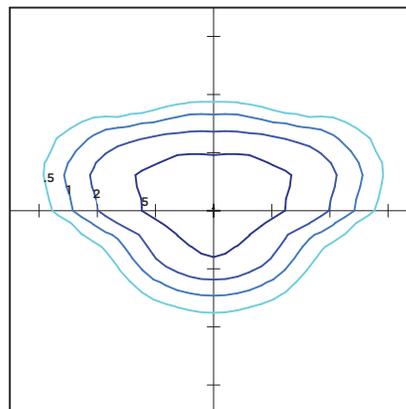
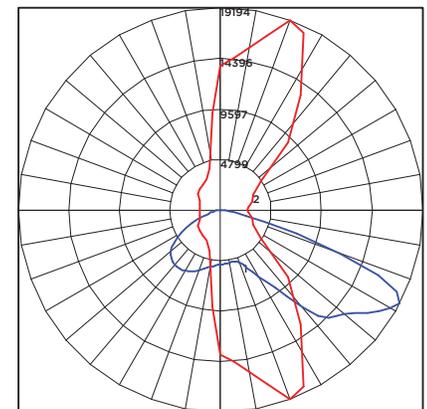
See <http://www.lsicorp.com/products/led-lighting-solutions.aspx> for detailed photometric data.

SLM-LED-30L-SIL-2-40-70CRI**LUMINAIRE DATA**

Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	31,743
Watts	232
Efficacy	137
IES Type	Type II - Short
BUG Rating	B4-U0-G3

Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	4953	16%
Medium (30-60)°	19157	60%
High (60-80)°	7350	23%
Very High (80-90)°	284	1%
Uplight (90-180)°	0	0%
Total Flux	31743	100%

ISO FOOTCANDLE**25' Mounting Height/ 25' Grid Spacing**
 5 FC
 2 FC
 1 FC
 0.5 FC
POLAR CURVE



Type: _____

Slice Medium Outdoor LED Area Light

PHOTOMETRICS (CONT.)

SLM-LED-30L-SIL-3-40-70CRI

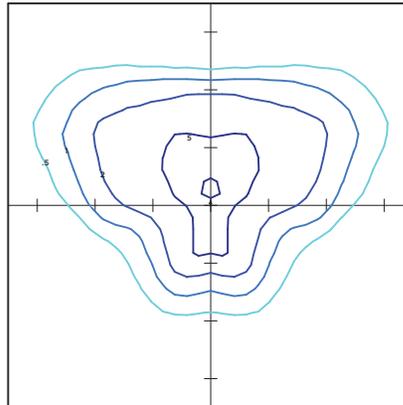
LUMINAIRE DATA

Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	32,206
Watts	232
Efficacy	139
IES Type	Type III - Short
BUG Rating	B4-U0-G4

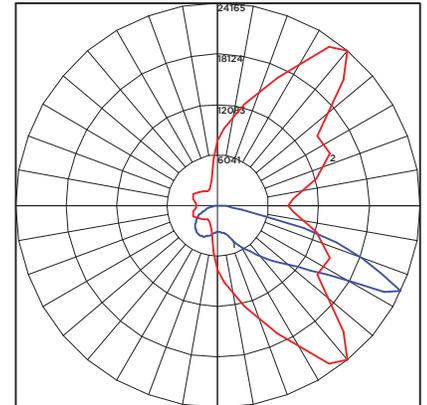
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	3408	11%
Medium (30-60)°	16397	51%
High (60-80)°	11868	37%
Very High (80-90)°	533	2%
Uplight (90-180)°	0	0%
Total Flux	32206	100%

ISO FOOTCANDLE



POLAR CURVE



25' Mounting Height/ 25' Grid Spacing

■ 5 FC ■ 2 FC ■ 1 FC ■ 0.5 FC

SLM-LED-30L-SIL-FT-40-70CRI

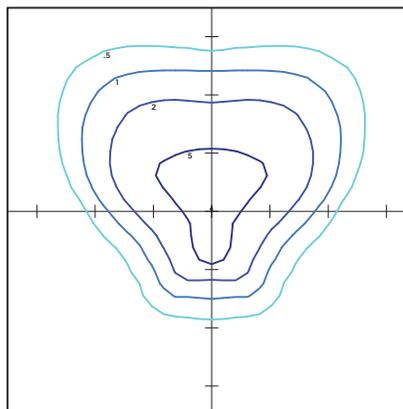
LUMINAIRE DATA

Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	31,921
Watts	232
Efficacy	138
IES Type	Type IV - Short
BUG Rating	B4-U0-G4

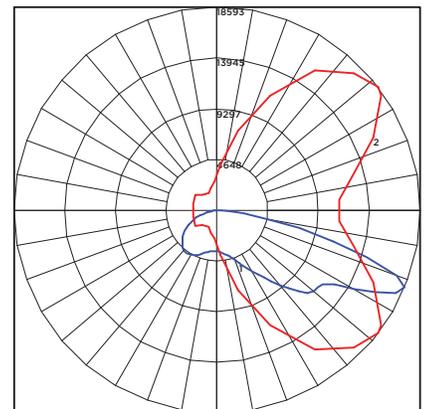
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	3874	12%
Medium (30-60)°	15694	49%
High (60-80)°	11696	37%
Very High (80-90)°	657	2%
Uplight (90-180)°	0	0%
Total Flux	31921	100%

ISO FOOTCANDLE



POLAR CURVE



25' Mounting Height/ 25' Grid Spacing

■ 5 FC ■ 2 FC ■ 1 FC ■ 0.5 FC





Type: _____

Slice Medium Outdoor LED Area Light

PHOTOMETRICS (CONT.)

SLM-LED-30L-SIL-5W-40-70CRI

LUMINAIRE DATA

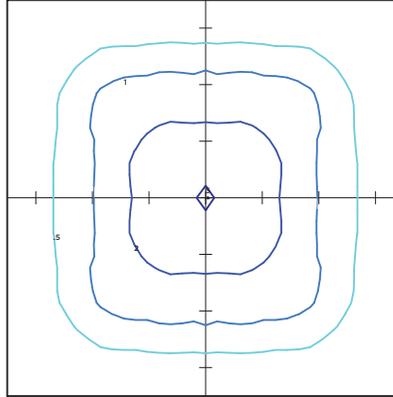
Type 5W Distribution

Description	4000 Kelvin, 70 CRI
Delivered Lumens	31,237
Watts	232
Efficacy	135
IES Type	Type IV - Short
BUG Rating	B5-U0-G3

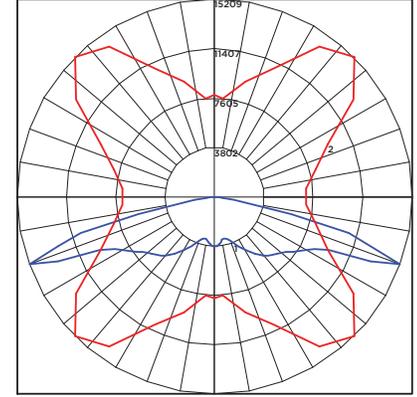
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	3186	10%
Medium (30-60)°	13594	44%
High (60-80)°	14195	45%
Very High (80-90)°	261	1%
Uplight (90-180)°	0	0%
Total Flux	31237	100%

ISO FOOTCANDLE



POLAR CURVE



25' Mounting Height/ 25' Grid Spacing

■ 5 FC ■ 2 FC ■ 1 FC ■ 0.5 FC

SLM-LED-30L-SIL-FTA-40-70CRI

LUMINAIRE DATA

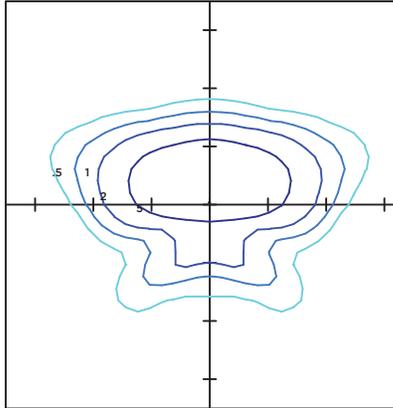
Type FTA Distribution

Description	4000 Kelvin, 70 CRI
Delivered Lumens	32,146
Watts	232
Efficacy	139
IES Type	Type I - Very Short
BUG Rating	B4-U0-G3

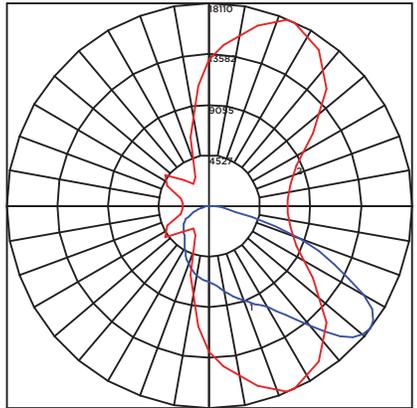
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	7371	23%
Medium (30-60)°	18710	58%
High (60-80)°	5624	17%
Very High (80-90)°	441	1%
Uplight (90-180)°	0	0%
Total Flux	32146	100%

ISO FOOTCANDLE



POLAR CURVE



25' Mounting Height/ 25' Grid Spacing

■ 5 FC ■ 2 FC ■ 1 FC ■ 0.5 FC





Type: _____

Slice Medium Outdoor LED Area Light

PHOTOMETRICS (CONT.)

SLM-LED-30L-SIL-AM-40-70CRI

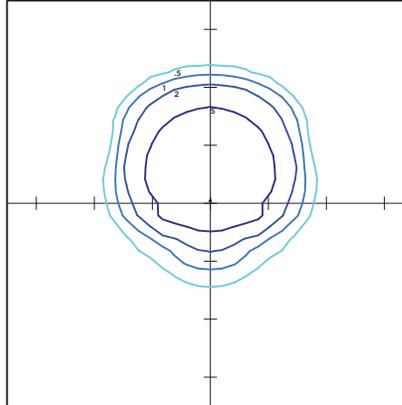
LUMINAIRE DATA

Type AM Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	32,543
Watts	232
Efficacy	140
IES Type	Type III - Very Short
BUG Rating	B4-U0-G3

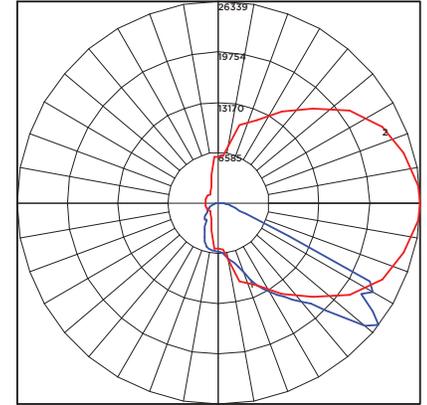
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	6390	9%
Medium (30-60)°	20951	43%
High (60-80)°	4838	48%
Very High (80-90)°	365	1%
Uplight (90-180)°	0	0%
Total Flux	32543	100%

ISO FOOTCANDLE



POLAR CURVE

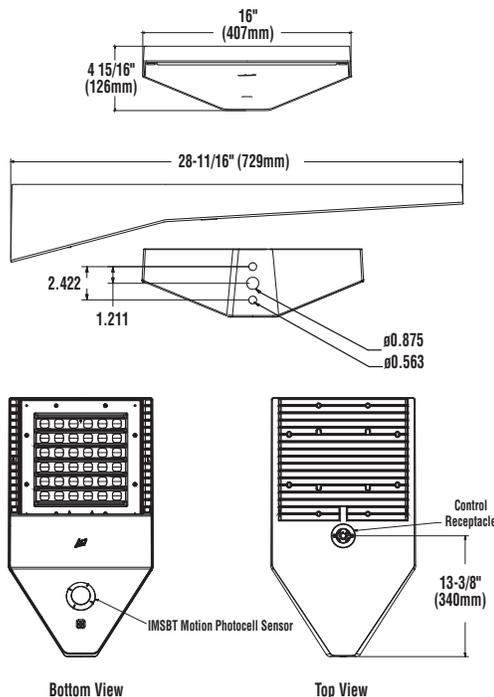


25' Mounting Height/ 25' Grid Spacing

■ 5 FC ■ 2 FC ■ 1 FC ■ 0.5 FC

PRODUCT DIMENSIONS

[Back to Quick Links](#)



LUMINAIRE EPA CHART - SLM									
Tilt Degree		0°	30°	45°	Tilt Degree		0°	30°	45°
Single	0.5	2.1	2.6	T90°	1.2	2.9	3.6		
D180°	1.1	2.1	2.6	TN120°	1.3	4.4	5.4		
D90°	0.9	2.5	3.1	Q90°	1.2	2.9	3.6		



Submitted by FISHER LIGHTING AND CONTROLS 	Job Name: Providence Energy LTD - Well Pad - Lighting	Catalog Number: SLM LED 42L SIL FT UNV DIM 40 70CRI PCI(VOLTAGE)BRZ IL Notes:	Type: SITE FLC21-10453
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Type: _____

Slice Medium Outdoor LED Area Light

CONTROLS

AirLink Wireless Lighting Controller

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system.

The wireless integrated controller is compatible with this fixture.

Click the link below to learn more details about AirLink.

<https://www.isicorp.com/documents/datasheets/airlink-outdoor-specsheet.pdf>

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click the link below to learn more details about IMSBT.

<https://www.isicorp.com/documents/datasheets/imsbt-specsheet.pdf>

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click the link below to learn more details about AirLink Blue.

<https://www.lsi-airlink.com/airlink-blue/>

POLES & BRACKETS

LSI offers a full line of poles and mounting accessories to complete your lighting assembly. Aluminum and steel in both square and round shafts. In addition, LSI offers round tapered, fluted and hinge based poles. Designed and engineered for durability and protected with our oven baked DuraGrip Protection System. Also available with our DuraGrip+ Protection system for unmatched corrosion resistance and an extended warranty. American made in our Ohio facility with industry leading lead times.

Click the link below to learn more details about poles & brackets.

<https://www.isicorp.com/products/poles-and-brackets-area-street.aspx>



BKA UMB CLR

The 3G rated UMB allows for seamless integration of LSI luminaires onto existing/ retrofit or new construction poles. The UMB was designed for square or round (tapered or straight) poles with two mounting hole spacings between 3.5" - 5".



BKS PQM15 CLR

The Pole Quick Mount Bracket allows for preset 15° up tilt of LSI luminaires for greater throw of light and increased vertical illumination as well as fast installation onto poles with LSI's 3" or 5" bolt pattern.



BKA ASF CLR

The adjustable Slip Fitter is a 3G rated rugged die cast aluminum adapter to mount LSI luminaires onto a 2" iron pipe, 2 3/8 OD tenon. The Adjustable Slip Fitter can be rotated 180° allowing for tilting LSI luminaires up to 45° and 90° when using a vertical tenon.



BKS PQMH CLR

The Pole Quick Mount Bracket allows for lightning fast installation of LSI luminaires onto existing and new construction poles with LSI's B3 or B5 standard pole bolt patterns.



Square Pole
14'-39'



Round Pole
10'-30'



Tapered Pole
20'-39'



Job Name:

Providence Energy LTD - Well Pad - Lighting

Catalog Number:4SQ B3 S11G25 S BRZ / ABKIT 4SQ STL
PL 3/4X30 11BC / KIT BCVR 4BC BRZ

Notes:

Type:**SITE**

FLC21-10453



Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Steel Poles

Square Straight

**QUICK LINKS**[Ordering Guide](#)[Configurations](#)[Dimensions](#)[EPA](#)**FEATURES & SPECIFICATIONS****Pole Shaft**

- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 psi.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing Ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip® Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip® Plus Protection System is selected, in addition to the DuraGrip® Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior, sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant



Job Name:

Providence Energy LTD - Well Pad - Lighting

Catalog Number:4SQ B3 S11G25 S BRZ / ABKIT 4SQ STL
PL 3/4X30 11BC / KIT BCVR 4BC BRZ

Notes:

Type:**SITE**

FLC21-10453

**Steel Poles - Square Straight****ORDERING GUIDE**[Back to Quick Links](#)TYPICAL ORDER EXAMPLE: **4SQ B3 S11G 24 S PLP DGP**

Pole Series	Mounting Method	Material	Height ²	Mounting Configuration	Pole Finish	Options
4SQ - 4" x 4" Square Straight Pole	Bolt-On Mount¹ - See pole selection guide for patterns and fixture matches. B5 - 5" Traditional Drilling Pattern B3 - 3" Reduced Drilling Pattern B2 - 2" Reduced Drilling Pattern	S11G - 11 Ga. Steel	8'	S - Single/Parallel D180 - Double D90 - Double DN90 - Double T90 - Triple TN120 - Triple Q90 - Quad QN90 - Quad	BRZ - Bronze BLK - Black PLP - Platinum Plus WHT - White SVG - Satin Verde Green GPT - Graphite MSV - Metallic Silver BZA - Alternate Bronze	<div style="border: 1px solid black; padding: 5px;"> GA - Galvanized Anchor Bolts SF - Single Flood³ DF - Double Flood³ DGP - DuraGrip[®] Plus LAB - Less Anchor Bolts CRXX - Conduit Raceway⁴ </div>
5SQ - 5" x 5" Square Straight Pole		S07G - 07 Ga. Steel	10'			
6SQ - 6" x 6" Square Straight Pole			12'			
	T - Tenon Mount - See pole selection guide for tenon and fixture/bracket matches.		13'			
			14'			
			15'			
	I - No Mounting Holes ¹ - Use with: • BKA 4ISF & BKA 5ISF • BKA X4ISF & BKA X5ISF		16'	N - Tenon Mount (Standard tenon size is 2-3/8" O.D.)		
			17'			
			17' 6"			
			18'			
			20'			
			22'			
			22' 6"			
			23'			
			24'			
			25'			
		26'				
		27'				
		28'				
		30'				
		32'				
		35'				
		39'				

Height Restriction,
 Consult Pole
 Selection Chart on
 opposite page

Accessory Ordering Information

Description	Order Number	Description	Order Number
4BC - 4" Square Base Cover	122559CLR	Vibration Damper - 4" Square Pole (bolt-on mount only)	172539
5BC - 5" Square Base Cover	122561CLR	Vibration Damper - 5" Square Pole (bolt-on mount only)	172538
6BC - 6" Square Base Cover	122563CLR	Vibration Damper - 6" Square Pole (bolt-on mount only)	178361
ER2 - Weatherproof Duplex Receptacle	122566CLR		
GFI - Ground Fault Circuit Interrupter	122567CLR		
MH5 - mounting Hole Plugs for use with 5" traditional drill pattern (3 set of 3 plugs)	132336		
MH3 - mounting Hole Plugs for use with 3" reduced drill pattern (3 set of 3 plugs)	681126		
MH2 - Mounting Hole Plugs for use with 2" reduced drill pattern (3 sets of 3 plugs)	725841		

FOOTNOTES:

- 1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional Drill Pattern spec sheets.
- 2 - Pole heights will have +/- 1/2" tolerance.
- 3 - See Flood Lighting Brackets section for choice of FBO brackets.
- 4 - CR selection must indicate required height and side of pole mounting location. Mounting template required at time of order.



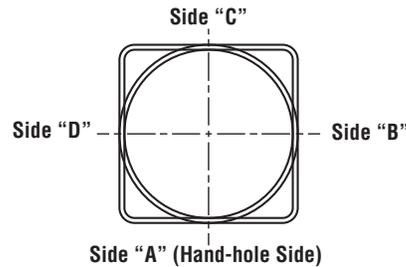


Steel Poles - Square Straight

DRILLING LOCATIONS

[Back to Quick Links](#)

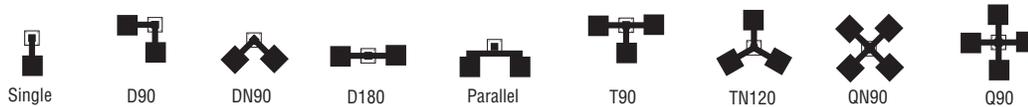
Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180		X		X
D90	X			X
DN90 ¹				
T90	X	X		X
TN120 ²				
Q90	X	X	X	X
QN90 ³				
Single FBO	X			
Double FBO		X		X

**NOTES:**

- Two locations will be 45° to the left and right of Side A.
- Other two locations will be 120° to the left and right of Side A.
- Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

FIXTURE CONFIGURATIONS



BOLT CIRCLE

4" (102mm) square
10-1/8" (257mm) sq.



11" (279mm) Dia. Bolt Circle

5" (127mm) square
10-1/8" (257mm) sq.



11" (279mm) Dia. Bolt Circle

5" (127mm) square
10-1/8" (257mm) sq.



11" (279mm) Dia. Bolt Circle

6" (152mm) square
12" (305mm) sq.



12" (305mm) Dia. Bolt Circle

Bolt Circle Designator	B	C	D	J
Bolt Circle	Slotted 8"-11" (203mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 12" (305mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)	12" sq. x 1-1/8" thk. (305mm x 29mm)
Pole Gauge	11	11	7	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.



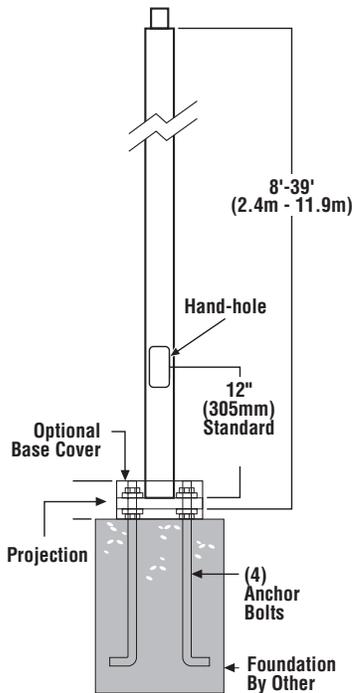


Steel Poles - Square Straight

PRODUCT DIMENSIONS

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SQT -
N= 2-3/8" (60mm) O.D. x 4-3/4" (121mm) Tenon



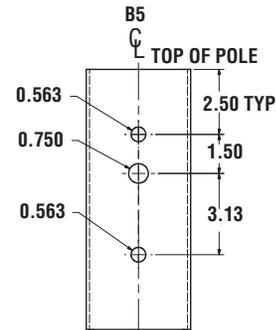
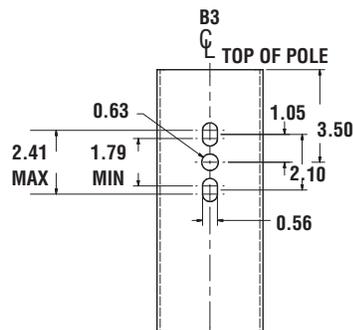
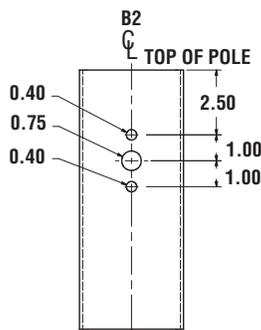
SF -
Single Flood Pole Preparation



SHIPPING WEIGHTS

4"(102mm) sq. 11 Ga. is approximately	7.50 lbs./ft.
4"(102mm) sq. 07 Ga. is approximately	10.00 lbs./ft.
5"(127mm) sq. 11 Ga. is approximately	9.00 lbs./ft.
5"(127mm) sq. 07 Ga. is approximately	12.50 lbs./ft.
6"(152mm) sq. 07 Ga. is approximately	15.40 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs. (7kg)/set
Anchor Bolts (1" x 36")(25mm x 914mm)	30 lbs. (14kg)/set

Bolt-On Mount 2-Bolt Pattern





Steel Poles - Square Straight

WIND SPEED

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EPA Information

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.

CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE ¹	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA									
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH	
4" x 11-ga x 12'	12	11	B	8" - 11"	0.75	13.9	12.5	11.3	9.2	7.6	6.3	5.2	4.3	3.6	
4" x 11-ga x 14'	14	11	B	8" - 11"	0.75	10.7	9.5	8.5	6.8	5.4	4.4	3.5	2.7	2.1	
4" x 11-ga x 16'	16	11	B	8" - 11"	0.75	8.2	7.2	6.4	4.9	3.8	2.9	2.1	1.5	1.0	
4" x 11-ga x 18'	18	11	B	8" - 11"	0.75	6.3	5.4	4.7	3.4	2.4	1.6	1.0	0.4	n/a	
4" x 11-ga x 20'	20	11	B	8" - 11"	0.75	4.6	3.9	3.2	2.1	1.2	0.6	n/a	n/a	n/a	
4" x 11-ga x 22'	22	11	B	8" - 11"	0.75	7.6	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a	
4" x 11-ga x 24'	24	11	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a	
4" x 11-ga x 26'	26	11	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a	
4" x 7-ga x 14'	14	7	B	8" - 11"	0.75	18.3	16.4	14.9	12.2	10.2	8.5	7.1	5.9	5.0	
4" x 7-ga x 16'	16	7	B	8" - 11"	0.75	14.7	13.2	11.8	9.6	7.8	6.3	5.2	4.2	3.4	
4" x 7-ga x 18'	18	7	B	8" - 11"	0.75	11.9	10.5	9.3	7.4	5.9	4.6	3.6	2.8	2.1	
4" x 7-ga x 20'	20	7	B	8" - 11"	0.75	9.6	8.4	7.4	5.7	4.3	3.2	2.3	1.6	0.9	
4" x 7-ga x 22'	22	7	B	8" - 11"	0.75	7.7	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a	
4" x 7-ga x 24'	24	7	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a	
4" x 7-ga x 26'	26	7	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a	
4" x 7-ga x 28'	28	7	B	8" - 11"	0.75	3.3	2.5	1.8	0.7	n/a	n/a	n/a	n/a	n/a	
4" x 7-ga x 30'	30	7	B	8" - 11"	0.75	2.2	1.4	0.8	n/a	n/a	n/a	n/a	n/a	n/a	
5" x 11-ga x 14'	14	11	C	9" - 11"	0.75	17.4	15.7	14.1	11.5	9.3	7.7	6.3	5.2	4.2	
5" x 11-ga x 16'	16	11	C	9" - 11"	0.75	13.8	12.3	10.9	8.7	6.9	5.5	4.3	3.3	2.5	
5" x 11-ga x 18'	18	11	C	9" - 11"	0.75	10.8	9.6	8.4	6.5	4.9	3.7	2.6	1.8	1.1	
5" x 11-ga x 20'	20	11	C	9" - 11"	0.75	8.5	7.3	6.3	4.6	3.2	2.1	1.2	0.5	n/a	
5" x 11-ga x 22'	22	11	C	9" - 11"	0.75	10.9	9.5	8.3	6.2	4.5	3.2	2.1	1.2	0.5	
5" x 11-ga x 24'	24	11	C	9" - 11"	0.75	8.8	7.5	6.4	4.5	3.0	1.8	0.8	n/a	n/a	
5" x 11-ga x 26'	26	11	C	9" - 11"	0.75	6.8	5.7	4.6	3.0	1.6	0.6	n/a	n/a	n/a	
5" x 11-ga x 28'	28	11	C	9" - 11"	0.75	5.2	4.1	3.2	1.6	0.4	n/a	n/a	n/a	n/a	
5" x 11-ga x 30'	30	11	C	9" - 11"	0.75	3.6	2.7	1.8	0.4	n/a	n/a	n/a	n/a	n/a	
5" x 7-ga x 20'	20	7	D	9" - 11"	1.00	21.6	19.3	17.3	14.0	11.3	9.2	7.4	6.0	4.8	
5" x 7-ga x 22'	22	7	D	9" - 11"	1.00	20.7	18.6	16.6	13.3	10.7	8.5	6.8	5.4	4.2	
5" x 7-ga x 24'	24	7	D	9" - 11"	1.00	17.7	15.6	13.8	10.8	8.5	6.6	5.0	3.7	2.6	
5" x 7-ga x 26'	26	7	D	9" - 11"	1.00	14.9	13.1	11.4	8.8	6.6	4.9	3.5	2.3	1.3	
5" x 7-ga x 28'	28	7	D	9" - 11"	1.00	12.5	10.9	9.4	6.9	4.9	3.4	2.1	1.0	n/a	
5" x 7-ga x 30'	30	7	D	9" - 11"	1.00	10.3	8.9	7.5	5.2	3.4	2.0	0.8	n/a	n/a	
5" x 7-ga x 35'	35	7	D	9" - 11"	1.00	6.0	4.8	3.6	1.8	n/a	n/a	n/a	n/a	n/a	
6" x 7-ga x 24'	24	7	J	12"	1.00	18.6	16.4	14.3	11.2	8.6	6.5	4.8	3.4	2.2	
6" x 7-ga x 26'	26	7	J	12"	1.00	15.6	13.4	11.7	8.8	6.5	4.6	3.0	1.8	0.7	
6" x 7-ga x 28'	28	7	J	12"	1.00	12.9	10.9	9.3	6.7	4.6	2.8	1.5	n/a	n/a	
6" x 7-ga x 30'	30	7	J	12"	1.00	10.4	8.8	7.3	4.8	2.9	1.3	n/a	n/a	n/a	
6" x 7-ga x 32'	32	7	J	12"	1.00	8.3	6.8	5.5	3.1	1.3	n/a	n/a	n/a	n/a	
6" x 7-ga x 34'	34	7	J	12"	1.00	6.5	5.0	3.7	1.6	n/a	n/a	n/a	n/a	n/a	
6" x 7-ga x 35'	35	7	J	12"	1.00	5.5	4.2	2.9	0.9	n/a	n/a	n/a	n/a	n/a	
6" x 7-ga x 39'	39	7	J	12"	1.00	2.3	1.0	n/a							

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.

CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:

- 1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.
- 2- LSI Industries recommends a vibration damper be ordered with this length.



ODOR MITIGATION PLAN



POCO Operating

Wakeman 20-17 Pad

Sec. 20 T1S R65W (SWSE)

Adams County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application, this Odor Mitigation Plan is consistent with the requirements of Rule 304.c.(4)

September 28, 2023

Providence Energy Operating LLC Adams County, Colorado

Odor Mitigation Plan

Project Summary:

Providence Energy Operating LLC's ("POCO's") proposed Wakeman 20-17 Pad "Location" is in Township 1 South, Range 65 West, Section 20 in Adams County, Colorado. The proposed Location is fee surface with a total pad disturbance of 7.807 acres, which includes the active working pad surface of 5.380 acres. During the interim reclamation and production phase 2.010 acres will be reclaimed, leaving a disturbed production area of 5.797. Construction is anticipated to begin no sooner than April 2023.

Introduction:

POCO is committed to safe and environmentally responsible management of all Colorado Oil and Gas Conservation Commission (COGCC) rules governing public health, safety, and welfare as it relates to Odor mitigation.

POCO will comply with applicable regulations of the COGCC and the Colorado Department of Public Health and Environment (CDPHE) for mitigating odors. POCO's operations at the proposed Wakeman 20-17 Pad Location will be conducted in a manner such that odors do not constitute a nuisance or hazard to public health, safety, and welfare. POCO's Odor Mitigation Plan (OMP) described herein is followed at every location and is consistent with COGCC Rule 426.a.

The OMP advances POCO's safety policies and provides accountability and transparency to our operations. This plan outlines POCO's processes and Best Management Practices (BMPs) for odor mitigation.

Drilling Operations:

POCO drilling operations utilize numerous BMPs and strategies to mitigate odors on and off the location. During drilling operations, all equipment is thoroughly inspected twice a day. Inspections include tanks, piping, and connections to ensure that equipment is in good condition, thus minimizing odors from contents. If excessive odors are detected emitting from equipment above standard operations, the equipment will be evaluated to ensure that all mitigating steps to minimize odors are taken. If routine inspections indicate that the equipment may need servicing, the equipment will be taken out of service and repaired to ensure that all necessary measures are taken to minimize odors. The following BMPs are used by drilling operations to minimize odors.

1. Drilling rig engine exhausts are pointed straight up so as not to be directed towards any occupied buildings.
2. To mitigate the effects of odor from POCO's operations, POCO employs only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. These Group III drilling fluids are odorless and contain no BTEX.
3. Drilling mud chillers are used to keep drilling fluid temperatures low.
 - a. Low drilling fluid temperatures reduce the volume of fluid vaporized into the air.

4. All drilling fluids will be routed through a closed loop system.
5. No open earthen pits to store fluids or drill cuttings.
6. Drill piping is wiped down each time the drilling operation “trips” out of the hole.
7. Drill cuttings are placed in metal bins and covered to minimize odors prior to being transported to the designated waste management facilities.

Completions Operations

POCO’s completion operations utilize numerous BMPs and strategies to minimize odors as listed below.

1. During the hydraulic fracturing process, diesel-fueled equipment is placed in a way that exhausts are pointed straight up and not in the direction of any occupied buildings.
2. Tier II or Tier IV diesel engines are used during hydraulic fracturing operations where available.

Production Operations

POCO’s production operations utilize the following BMPs and strategies to minimize odors.

1. During operations, tanks are sealed with a thief hatch to prevent emissions.
2. Emission Control Devices (Combustors) will be used to combust any flash gas from tanks.

Response Measures

There are five (5) Residential Building Units within 2,000 feet of the edge of working pad surface. The nearest RBU from the edge of working pad surface is to the southeast approximately 1,428’.

If an odor complaint is received, POCO will respond and evaluate the location to determine if the source of the odor is related to operations. POCO will respond and evaluate equipment and potential sources of odors to determine the root cause. If the odors are determined to be caused by POCO’s oil and gas operations, POCO will resolve the issue and remove odor causing equipment from service as soon as possible to ensure that all odors are minimized outside the boundaries of the oil and gas location.

Adams County Oil and Gas Facility
Permit

Visual Aesthetics Plan

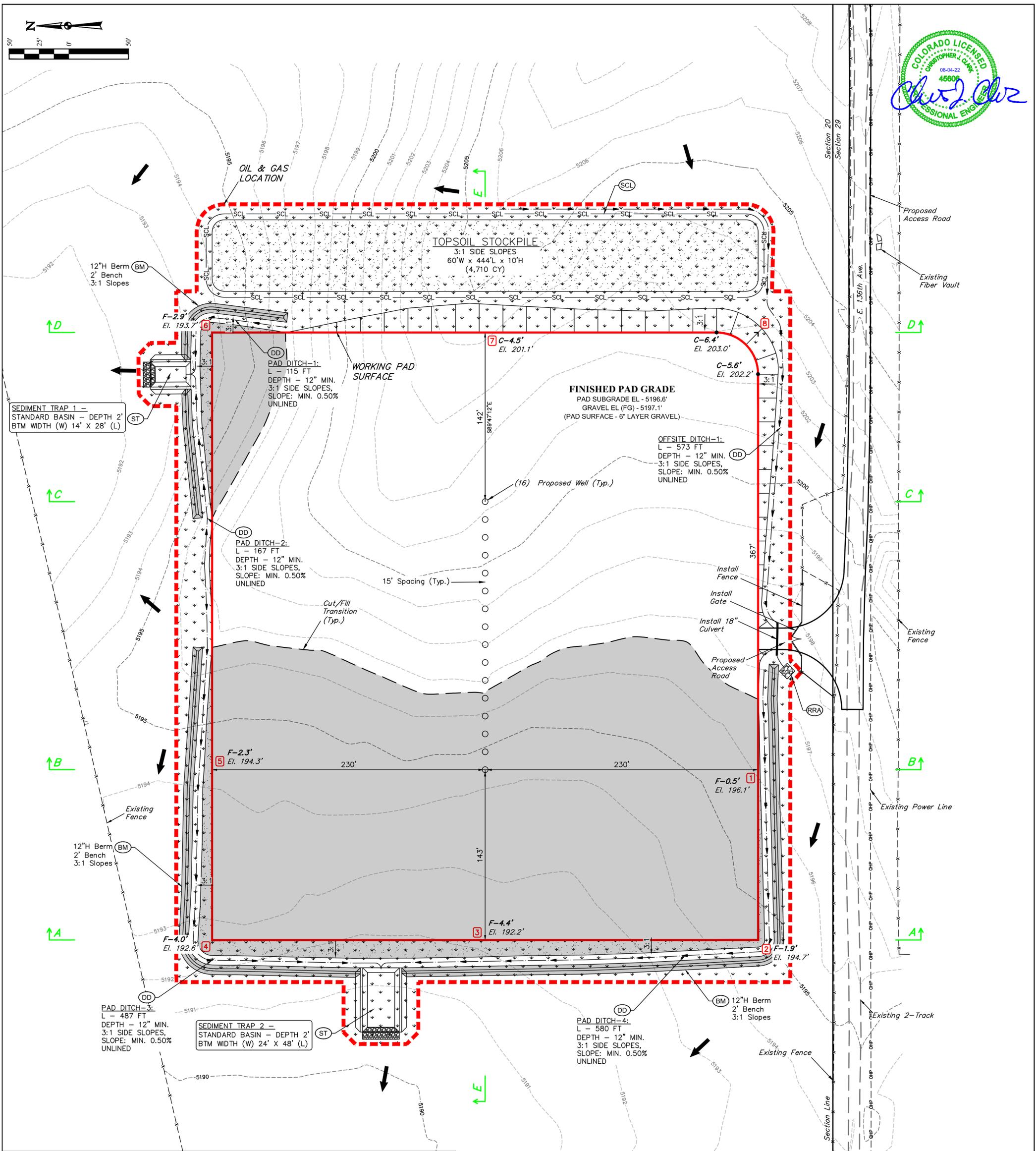
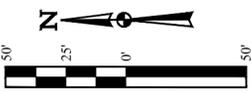


Visual Aesthetics Plan

Pursuant to Colorado Energy and Carbon Management Rule 425, all permanent equipment at new and existing Oil and Gas Facilities, regardless of construction date, which are observable from any public highway, road, or publicly-maintained trail, will be painted with uniform, non-contrasting, non-reflective color tones (similar to the Munsell Soil Color Coding System), and with colors matched to but slightly darker than the surrounding landscape.

Sound walls will be used to shield sensitive areas during drilling operations and will be considered and implemented according to third-party recommendations.

Each phase of operations will determine what equipment is on location. Except for the production, each stage will have temporary equipment that may be visible to the surrounding area and visible from the public roadways. The following plats depict each phase of operations and the equipment on location.



LEGEND

	WELL PAD CORNER STAKE		SEEDING AND MULCHING
	DESIGN "C" CUT OR "F" FILL AT CORNER STAKE		BERM
	EXISTING GROUND ELEV. AT CORNER STAKE (TRUNCATED LESS 5,000 FEET)		EXISTING FENCE
	DIVERSION DITCH		EXISTING POWER LINE
	OUTLET PROTECTION		EXISTING MAJOR CONTOUR
	SEDIMENT TRAP		EXISTING MINOR CONTOUR
	SEDIMENT CONTROL LOG		PROPOSED MAJOR CONTOUR
	RIP RAP APRON		PROPOSED MINOR CONTOUR
			WORKING PAD SURFACE
			OIL & GAS LOCATION

WORKING PAD SURFACE DISTURBANCE = 5.380 ACRES
 DISTURBANCE DURING CONSTRUCTION = 2.427 ACRES

- NOTES:**
- Rounded corners shown at 35' radius.
 - Construct diversion ditches as needed.
 - Contours shown at 1' intervals.
 - Cut/Fill slopes 3:1 (Typ.).
 - Overall working pad surface = 510' x 460'

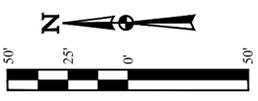
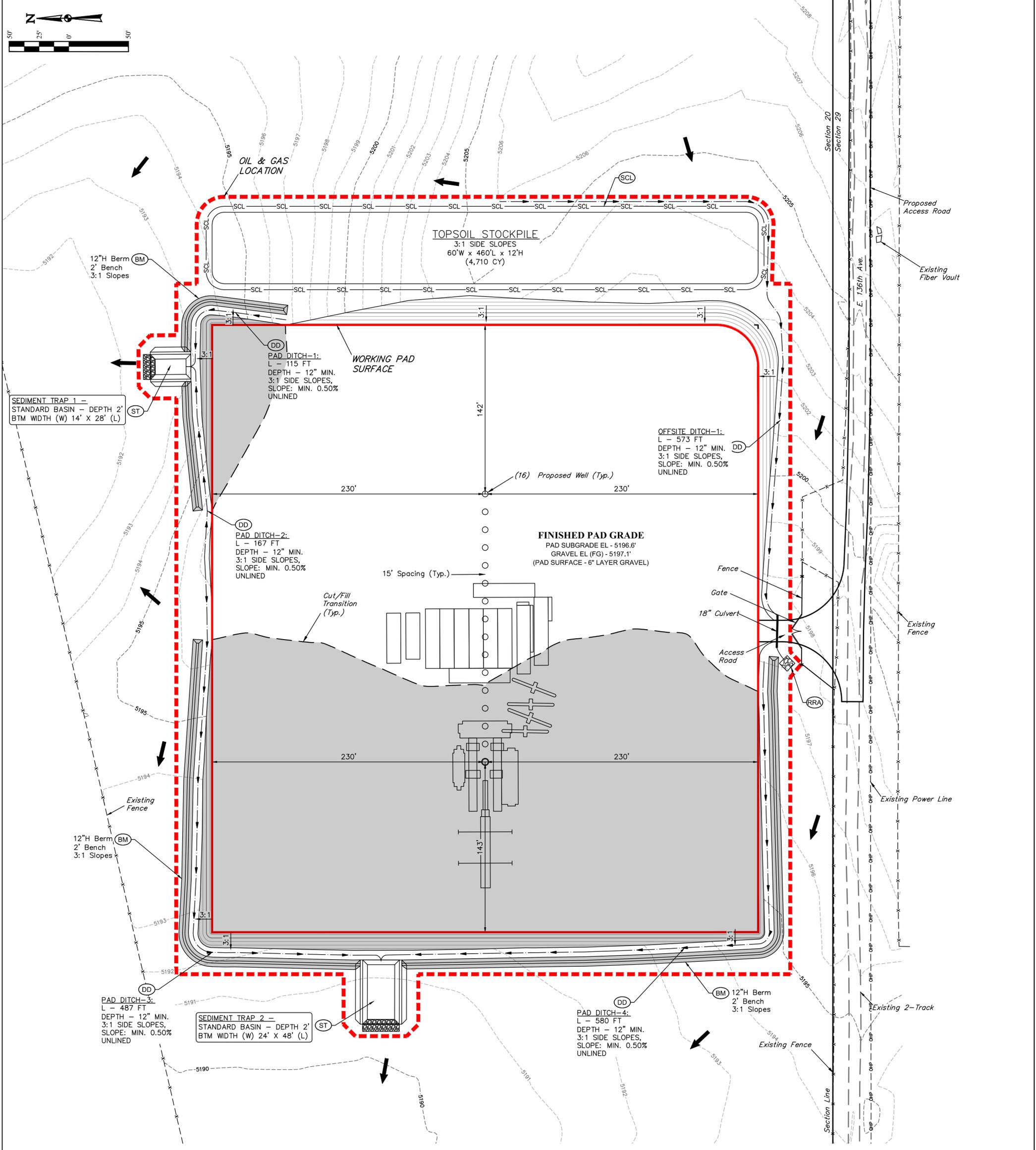
UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

CONSTRUCTION LAYOUT - PLAN VIEW



LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:
 • Contours shown at 1' intervals.
 • Overall working pad surface = 510' x 460'

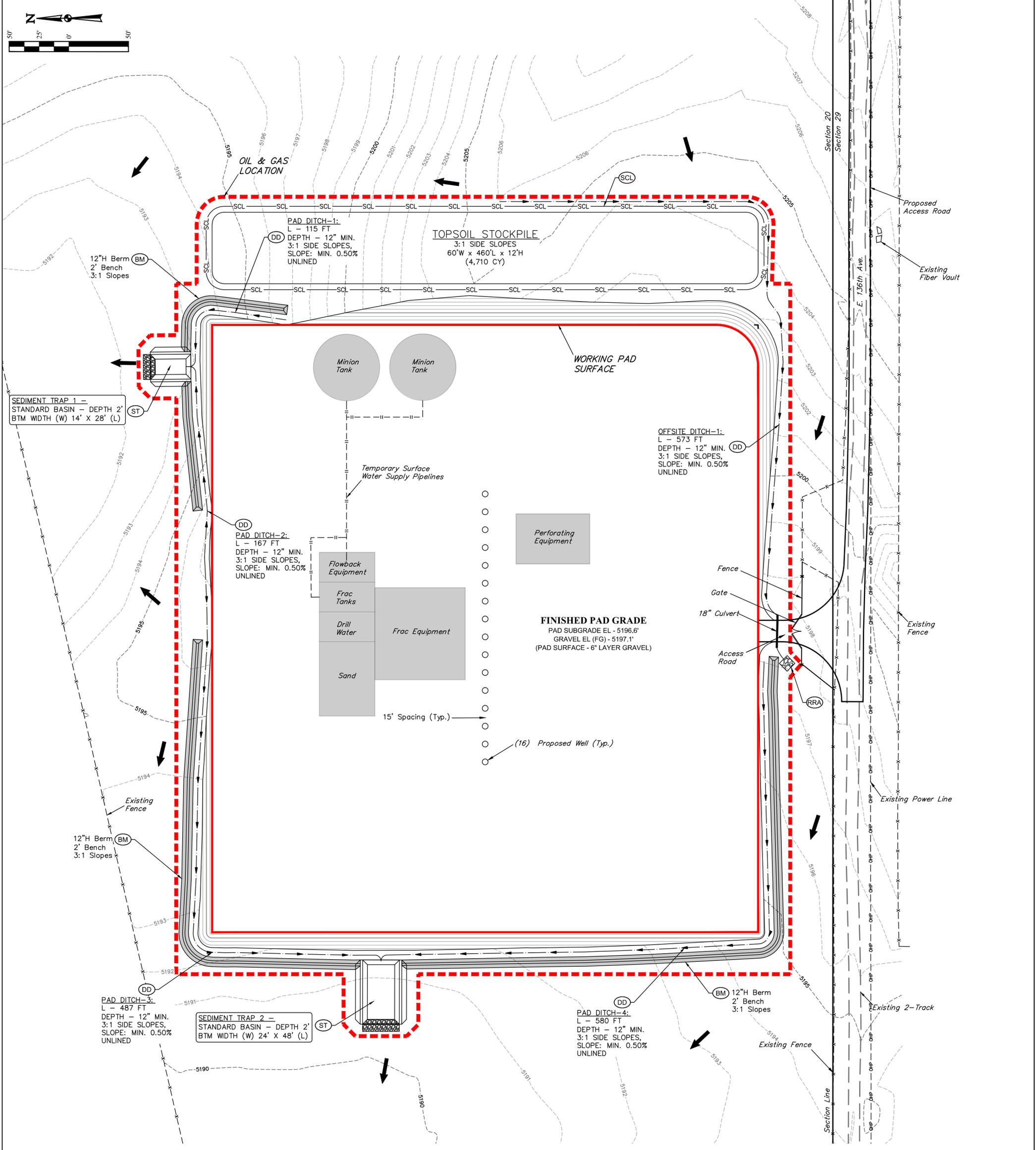
UELTS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY DRILL RIG LAYOUT



LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:

- Contours shown at 1' intervals.
- Overall working pad surface = 510' x 460'
- Cut/Fill slopes 3:1 (Typ.)

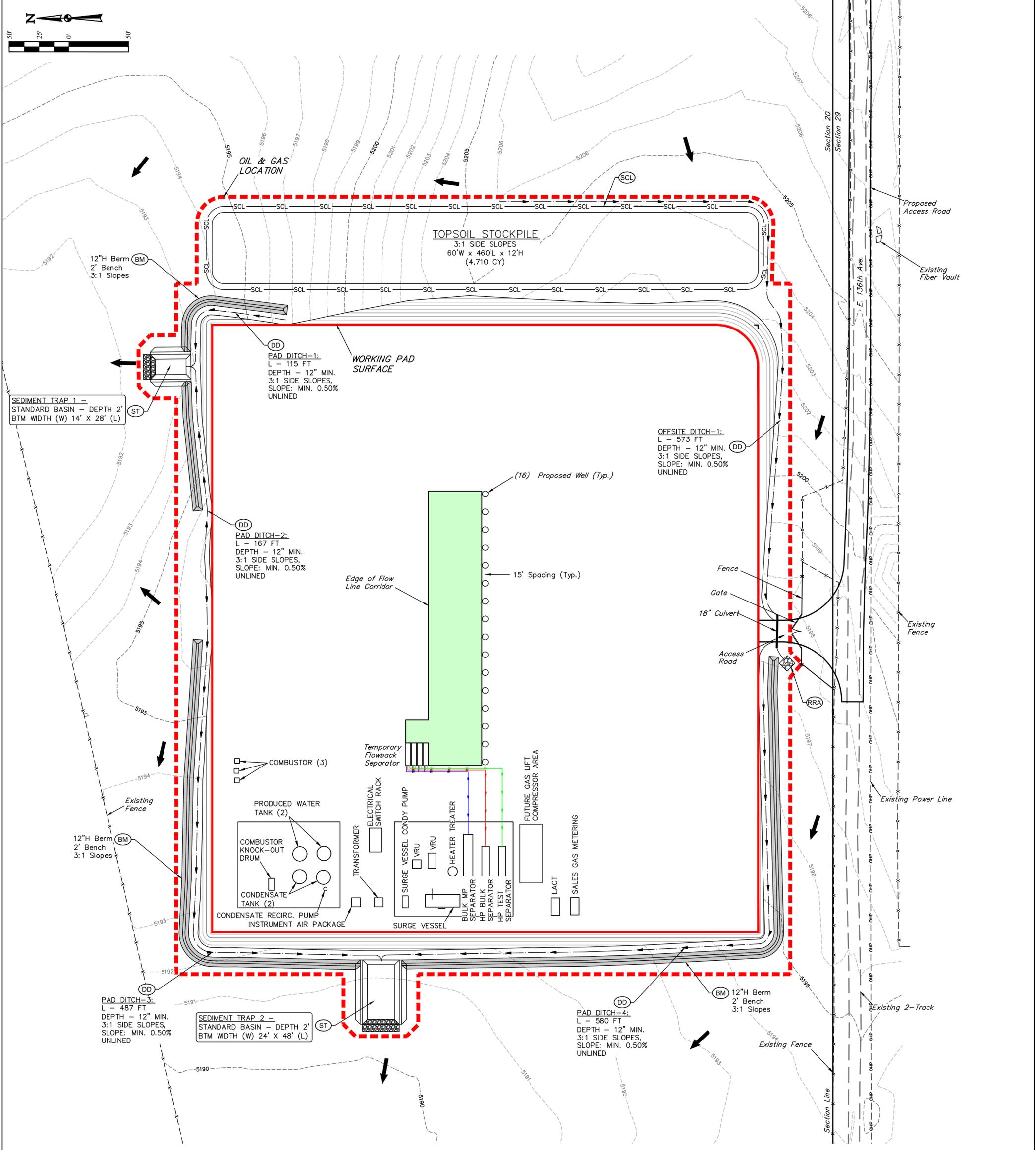
UELTS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY WELL COMPLETION & STIMULATION LAYOUT



LEGEND

DD DIVERSION DITCH	EXISTING FENCE
OP OUTLET PROTECTION	EXISTING POWER LINE
ST SEDIMENT TRAP	EXISTING MAJOR CONTOUR
SCL SEDIMENT CONTROL LOG	EXISTING MINOR CONTOUR
RRA RIP RAP APRON	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE
	OIL & GAS LOCATION

NOTES:

- Contours shown at 1' intervals.
- Overall working pad surface = 510' x 460'
- Cut/Fill slopes 3:1 (Typ.).

UELTS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

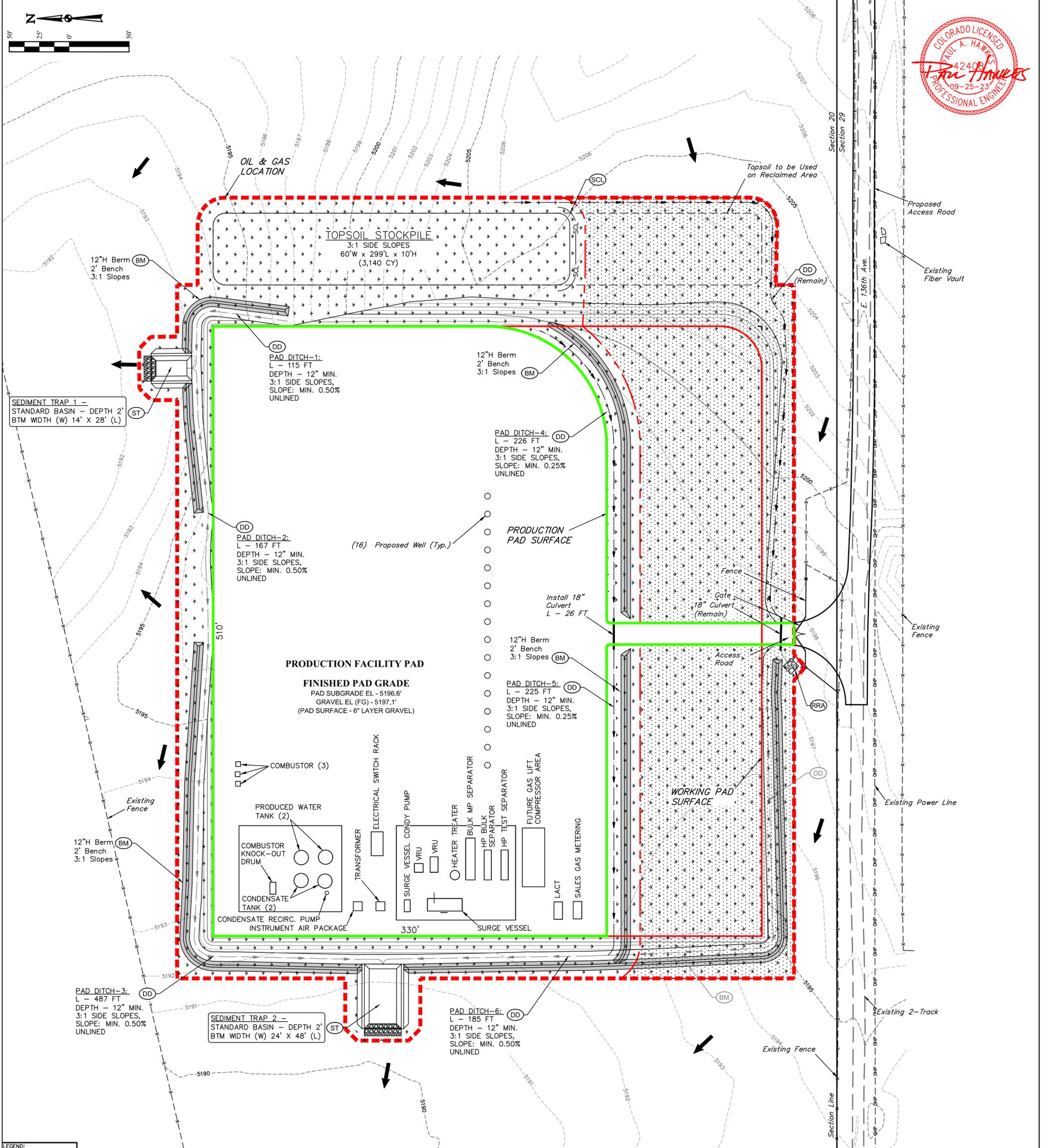
REV: 2 09-25-23 P.M. (ADD LACT)

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

PRELIMINARY FLOWBACK EQUIPMENT LAYOUT



APPROXIMATE UN-RECLAIMED ACREAGE = ±5.797 ACRES
 APPROXIMATE RECLAIMED ACREAGE = ±2.010 ACRES
 TOTAL OIL & GAS LOCATION = ±7.807 ACRES

SIZE OF DISTURBED AREA AFTER INTERIM RECLAMATION IN ACRES (COGCC 2A REPORTABLE): 5.797 ACRES

LEGEND			
	DD DIVERSION DITCH		BM BERM
	OP OUTLET PROTECTION		DD DIVERSION DITCH TO BE RECLAIMED
	ST SEDIMENT TRAP		ST SEDIMENT TRAP TO BE RECLAIMED
	SCL SEDIMENT CONTROL LOG		BM BERM TO BE RECLAIMED
	SM SEEDING AND MULCHING		EXISTING FENCE
	EXISTING MINOR CONTOUR		EXISTING MAJOR CONTOUR
	PROPOSED MAJOR CONTOUR		PROPOSED MINOR CONTOUR
	WORKING PAD SURFACE		PRODUCTION PAD SURFACE
	OIL & GAS LOCATION		LIMITS OF PERMANENT DISTURBANCE

NOTES:
 • Contours shown at 1' intervals.
 • Overall working pad surface = 510' x 460'
 • Cut/Fill slopes 3:1 (Typ.).

UETAH
 ENGINEERING & LAND SURVEYING

UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

REV: 2 09-25-23 P.M. (ADD LACT)

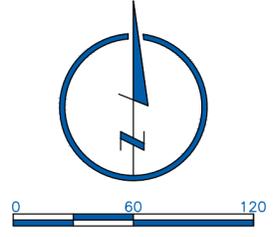
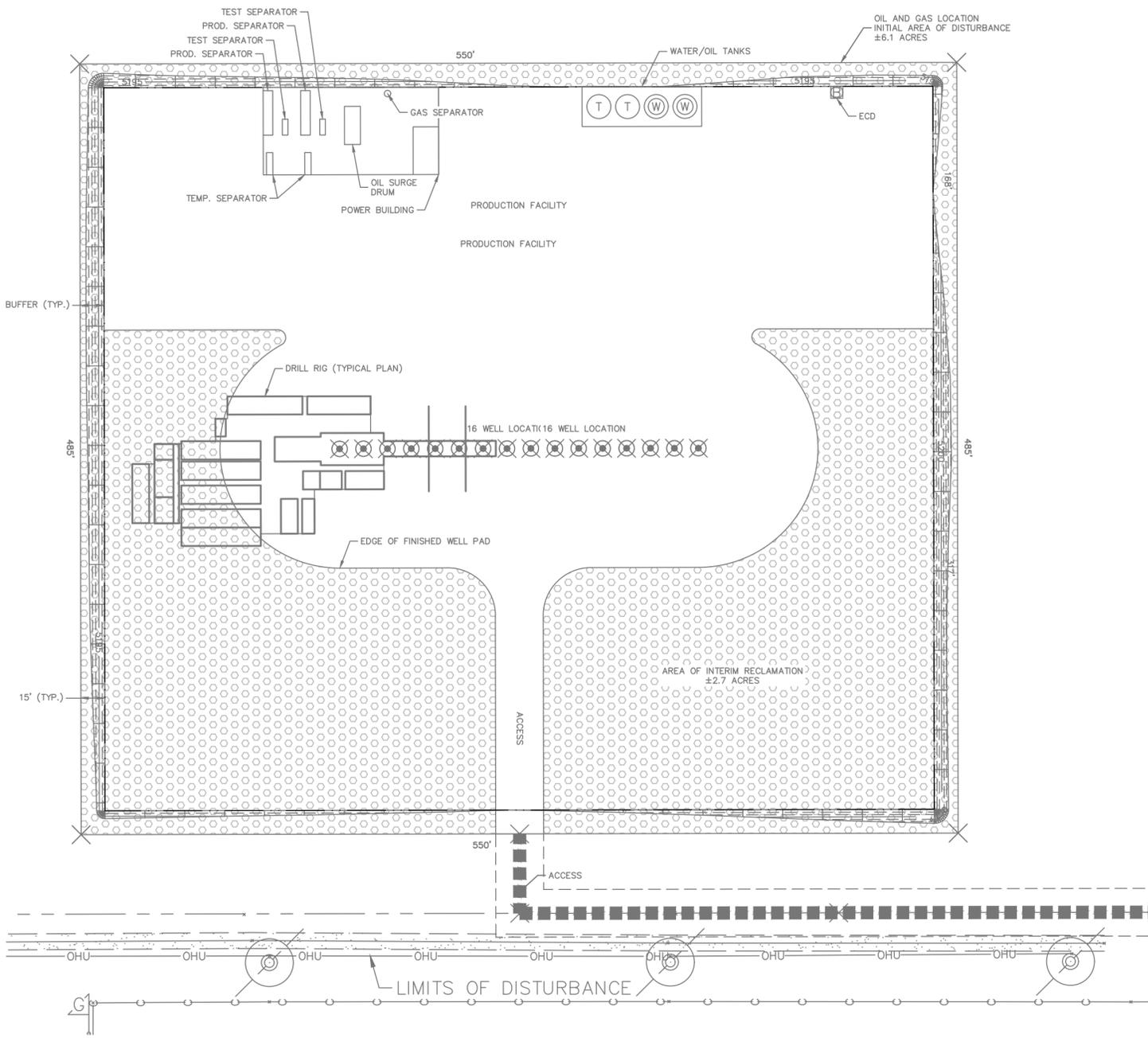
POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 50'

FACILITY LAYOUT

L:\Engineering\0218023.04 PS - Wakeman 20-17\DRAWINGS\CONSTRUCTION DRAWINGS\0218023.04 LS-01.dwg, 6/22/2018 8:43:51 AM, SAM CHRISTENSEN, LAMP RYNEARSON & ASSOCIATES



NATIVE GRASS SEED MIX:

CODE	BOTANICAL NAME	COMMON NAME	% OF MIX (PLS LBS)
	PASCOPYRUM SMITHII	WESTERN WHEATGRASS	30%
	ACHANTHERUM HYMENOIDES	INDIAN RICEGRASS	30%
	ELYMUS TRACHYCAUIUS	SLENDER WHEATGRASS	20%
	SPOROBOLUS CRYPTANRUS	SAND DROPSEED	20%

SEED MIX NOTES

- SEED SHALL BE FURNISHED IN BAGS OR CONTAINERS CLEARLY LABELED TO SHOW THE NAME AND ADDRESS OF THE SUPPLIER, THE SEED NAME, THE LOT NUMBER, NET WEIGHT, THE PERCENT OF WEED SEED CONTENT AND THE GUARANTEED PERCENTAGE OF PURITY AND GERMINATION.
- THE CONTRACTOR SHALL SUBMIT TO THE PROJECT REPRESENTATIVE A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED WITHIN SIX MONTHS PRIOR TO THE DATE OF DELIVERY. SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE.
- SEED AND SEED LABELS SHALL CONFORM TO ALL CURRENT STATE AND FEDERAL REGULATIONS AND WILL BE SUBJECT TO THE TESTING PROVISIONS OF THE ASSOCIATION OF OFFICIAL SEE ANALYSIS.
- COMPUTATIONS FOR QUANTITY OF SEED REQUIRED ARE BASED ON THE PERCENT OF PURITY AND PERCENT OF GERMINATION: POUNDS OF SEED X PURITY X GERMINATION = POUNDS OF PURE LIVE SEED (PLS).
- SITE PREPARATION FOR BAREGROUND SEEDING:
 - CONDUCT A SOIL TEST, PER ACRE, TO DETERMINE ANY NEEDED SOIL AMENDMENTS. IDEAL SOIL PH IS BETWEEN 6.0 AND 7.0.
 - REMOVE ALL EXISTING VEGETATION, SPRAY SEED AREA WITH NON-SELECTIVE HERBICIDE, REMOVE DEAD VEGETATION AND LARGE DEBRIS.
 - ADD SOIL AMENDMENTS AS NECESSARY TO ADJUST SOIL PH LEVELS AND TILL SOIL TO A 4" - 6" DEPTH. PULVERIZE AND LIGHTLY ROLL SOIL.
 - APPLY 1 LB OF PHOSPHOROUS(P) (2.27 LBS P205)/1000 SQ.FT. TO SOIL SURFACE.
- SEEDING METHODS, BASED ON THE SLOPE AND SOIL AT SITE. USE BROADCAST, DROP, SLIT OR DRILL SEEDING METHODS WHERE EROSION IS NOT A CONCERN.
 - DRILL SEEDING = 25LBS PER ACRE AND BROADCAST SEEDING = 37.5 LBS PER ACRE
 - SEED SHOULD BE PLANTED .125 TO .25 INCHES BELOW SOIL SURFACE, IN TWO DIRECTIONS PUTTING 1/2 OF THE SEED DOWN EACH DIRECTION. SEEDED AREAS SHOULD BE GENTLY ROLLED OR RAKED TO ENSURE GOOD SOIL TO SEED CONTACT.
- WATERING REQUIREMENTS:
 - WATER TO FIELD CAPACITY IMMEDIATELY AFTER SEEDING.
 - WEEK 1 - 3 AFTER SEEDING SOIL SHALL BE MOIST TO 1 INCH DEPTH.
 - WEEKS 4-6 AFTER SEEDING AREA SHALL BE WATERED 3-4 TIMES PER WEEK.
 - AFTER 6 WEEKS GRASS SHALL ONLY NEED WATER WHEN IT BEGINS TO SHOW DROUGHT STRESS.
- FERTILIZE SEEDED AREA ONCE FOR THE FIRST TWO MONTHS WITH .5 LBS OF N/1000 SQ.FT. AFTER SEEDING.
- MOW WHEN THE GRASS IS ONE INCH LONGER THAN DESIRED HEIGHT. DO NOT REMOVE MORE THAN 1/3 OR GRASS BLADE.

DRAWN BY	SJC
DESIGNED BY	SJC
DATE	6-22-2018
JOB NUMBER-TASKS	0218023.04
BOOK AND PAGE	

REVISIONS

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###	
###	
###	
###	

14710 West Dodge Road, Suite 100 | 402.496.2498 | P
Omaha, Nebraska 68154-2027 | 402.496.2730 | F
LAMP RYNEARSON & ASSOCIATES
www.LRA-inc.com

WAKEMAN 20-17 PAD
COUNTY OF ADAMS, CO

LANDSCAPE PLAN

###

###

SHEET

1 of 1

811

Know what's below.
Call before you dig.

ALL UTILITIES ARE SHOWN BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.



Water Quality Plan

Wakeman 20-17

POCO Holdco, LLC
9635 Maroon Circle, Suite 450
Englewood, Colorado 80112

November 2023



1.0 Introduction

The POCO Holdco, LLC (POCO) Wakeman 20-17 pad (Site) is located in Section 20, Township 1 South, Range 65 West in Adams County, Colorado. The proposed facility expansion will increase the working pad area and add 16 additional horizontal wells and associated production and storage equipment to the oil and gas production well pad and tank battery.

Operations at the Wakeman 20-17 production facility include the extraction and separation of condensate and natural gas as well as the storage of condensate and produced water. Equipment at the facility includes wellheads, separators, heater treaters, storage tanks and vapor recovery systems.

To prevent and mitigate potential impacts to surface and ground waters in the surrounding area, and in compliance with requirements of the United States Environmental Protection Agency (EPA), Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) and the Colorado Energy and Carbon Management (ECMC), POCO maintains and/or performs the following:

- Spill Prevention, Control, and Countermeasure (SPCC) Plan, per Title 40 Section 112 of the Code of Federal Regulations (40 CFR 112);
- Authorization to Discharge, Number COR403522, and a Construction Stormwater Management Plan (SWMP) in accordance with the Colorado Discharge Permit System (CDPS) COR400000 General Permit for Stormwater Discharges Associated with Construction Activity;
- Groundwater baseline monitoring pre- and post-spud in accordance with ECMC Rule 615; and
- Fluid Leak Detection Plan.

Facility environmental plans, the Authorization to Discharge and results of baseline groundwater monitoring are maintained at POCO's Englewood office and can be provided upon request.

2.0 Water Quality Management Practices

The following sections provide an overview of the contents of the plans, site-specific stormwater pollution control measures implemented to avoid adverse impacts to surface and ground waters in the area surrounding the facility, and private and community permitted water wells of public record within 1/2 mile of the facility.

POCO has identified private and community permitted water wells of public record within 1/2 mile of the Wakeman 20-17 facility as shown in Attachment A.



2.1 SPCC Plan

The SPCC Plan for the facility describes measures implemented by POCO to prevent oil discharges from impacting navigable waters and includes spill response measures to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge if one does occur.

2.1.1 Discharge Prevention Measures

Specific discharge prevention measures employed at the facility include:

- Conducting periodic inspections and providing training to oil handling personnel;
- Designation of a Person Responsible for Spill Prevention (PRSP);
- Annual discharge prevention briefings to share learnings each year in response to spill events;
- Procedures for loading/unloading oil;
- Closing of dike drains and inspection of rainwater discharge prior to discharge;
- Designed secondary containment to provide sufficient containment, inclusive of a 25-year, 24-hour precipitation event; and
- A program of flow line maintenance.

POCO constructs secondary containment structures for condensate and produced water storage in accordance with EPCRA Rule 603 requirements which also meet the spill prevention criteria under the SPCC regulations. Aboveground piping containing condensate is installed within secondary containment berms, except for load lines, which may or may not be installed within the containment. General containment is provided for aboveground piping and flow-through process equipment not constructed or installed within tank berms.

Specific information on these discharge prevention measures is included in the SPCC Plan.

2.1.2 Discharge or Drainage Controls

In accordance with 40 CFR Parts 112.7(c), 112.9(b), and 112.9(c)(2), the facility employs adequate discharge controls that include:

- Lined secondary containment with corrugated metal walls as the secondary containment system for condensate and produced water;
- Drip pots for condensate and/or produced water loading;
- Retention pond; and
- Spill kit with sorbent materials.

Additionally, while 40 CFR Part 112 does not require sized secondary containment for transfer areas used for the transfer of condensate and/or produced water from aboveground containers into tanker trucks, the transfer connections at the Wakeman 20-17 facility shall be located within the aboveground secondary containment of the tank battery.



2.1.3 Spill Response

POCO has established spill response procedures to mitigate adverse impacts to surface and groundwaters related to a discharge of condensate or produced water as part of the SPCC Plan. As part of the spill response procedures, POCO has engaged with a 3rd party spill clean up contractor to provide services immediately upon the release of a large spill.

2.1.4 Spill Notification

Section 4.0 of POCO's SPCC plan outlines the various written and verbal spill reporting and notification requirements that must be followed in the event of a spill or release at the facility. A summary table of reporting requirements and contacts are included in Appendix B of this plan. In the event of a release or spill at the facility, POCO shall refer to their SPCC plan for a comprehensive list of reporting and notification requirements.

2.2 Stormwater Management Plan

In accordance with the CDPHE WQCD, COR400000 general permit, POCO applied for and was granted coverage under this general permit for the construction and early operations of the facility. As part of the application process, POCO had to develop and implement a SWMP for the facility that identifies potential pollutant sources (PPSs), inspection frequencies and stormwater control measures employed to prevent pollutants from discharging with stormwater from the facility.

2.2.1 Potential Pollution Sources (PPS)

By identifying the PPSs at the facility, POCO can determine the type of stormwater management controls necessary to mitigate adverse impacts to surface and ground waters. The PPS identified in the facility SWMP include:

- Disturbed areas and soil stockpiles;
- Vehicle tracking;
- Loading operations for condensate, produced water and other chemicals;
- On-site waste management; and
- Small spills.

PPS identification is fluid and occurs throughout the life cycle of the facility; therefore, the stormwater management controls evolve over time to align with the discharge potential from the facility.

2.2.2 Stormwater Management Controls

To reduce and/or eliminate adverse impacts to surface and ground waters, POCO implements stormwater management controls for each identified PPS. Typical stormwater management controls include:

- Secondary containment structures;
- Drainage swales;
- Retention pond;
- Surface roughening during construction phases to prevent erosion and sediment deposition;



- Installation of erosion control measures such as silt fence, erosion control blankets or wattles;
- Hydro-seeding of reclaimed areas;
- Vehicle track pads.

In addition to physical controls, POCO may implement non-structural control measures such as minimizing the area of disturbance, utilizing natural flow paths, employee training and routine inspections.

2.3 Groundwater Baseline Monitoring Program

In accordance with ECMC Rule 615, POCO performs initial and subsequent groundwater monitoring for up to four available water sources within a ½ mile radius of an oil and gas well. An initial sampling is conducted in the 12 months prior to setting conductor pipe and subsequent sampling is conducted as follows:

- Between 6 and 12 months following completion
- Between 60 and 72 months following completion
- Every 5 years thereafter for the life of the well

Results of the sampling are reviewed and provided not only to the ECMC, but the water well owner or landowner. If sample results indicate thermogenic or a mixture of thermogenic and biogenic gas, the methane concentration increases by more than 5.0 mg/l between sampling periods, or methane increases to more than 10 mg/l, POCO shall notify the ECMC Director immediately. The frequency and longevity of the sampling program supports POCO's effort to reduce and/or eliminate adverse impacts to ground water related to operations.

3.0 Water Usage and Source Protection

POCO estimates that approximately 4,733,333 barrels of surface water will be required to complete the drilling and completion of the planned 16 wells at the Wakeman location. The water required to develop the Wakeman pad will be delivered via temporary pipelines from either Barr Lake, Fulton Ditch, or the City of Brighton. POCO may contract with Tallgrass Water who can supply water from their own wells and retention ponds. The water will be stored on location in water tanks.

POCO will contract with NGL Water Solutions and/or Expedition Water Solutions for off-site disposal of wastewater via tanker truck.

ATTACHMENT A
Hydrography Map



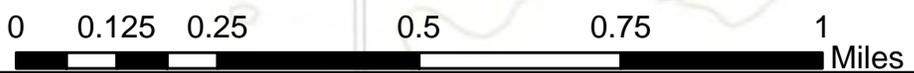
Proposed Location of Wakeman 20-17 Pad

E-136th Ave

Harvest Rd

E-133rd Cir

5203 ft



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

MAP FEATURES

-  Permitted Water Wells
-  Proposed Wakeman 20-17 Pad Location
-  Surface Flow
-  1/2 Mile Site Buffer
-  Lake/ Pond

REVISION	DATE

POCO

Wakeman 20-17
Section 20, Township 1S, Range 65W
Adams County
Hydrography Map



5545 W. 56th Ave Unit E
Arvada, CO 80002
(303) 289-7520
www.aquionix.com

DRAWN BY: GS
DATE DRAWN: 11/03/2023
MAP SCALE: 1:15,000
COORD. SYSTEM: WGS_1984_Web_Mercator_Auxiliary_Sphere

ATTACHMENT B
Discharge Contact List

Discharge Contact List

Upon discovery of a spill and after the immediate discharge response procedures outlined in Section 5.0 of the POCO Consolidated SPCC Plan have been completed, the discharge should be reported to the appropriate personnel and agencies by the Person Responsible for Spill Prevention. If unable to reach the Person Responsible for Spill Prevention, report the spill to listed contact at POCO or alternate.

Contact Entity	Contact	Phone #	Circumstances	When-to-Notify
Person Responsible for Spill Prevention				
POCO Holdco, LLC	Meghan Grimes (PRSP)	720-256-8774	Any discharge event, injury, fire	Immediately
Emergency Response Contact List				
Emergency Response	NA	911	Fire or injured personnel	Immediately
Federal Discharge Contact List				
National Response Center	NA	1-800-424-8802	Discharge reaching or threatening navigable waters	Immediately
EPA Region VIII	NA	1-800-227-8917	Discharge of 1,000 gallon or 2nd event of 42 gallon in navigable waters	Written Notification within 60 days (EPA Region VIII Regional Administrator)
Colorado Discharge Contact List				
ECMC	N/A	303-894-2100	Spill of exploration or production wastes > 20 bbls on state or private land	Within 24-Hours (ECMC Form 19 must be submitted with 72-hours)*
CPDHE	24-Hour Spill Reporting Line	1-877-518-5608	Spills of any size that impact or threaten to impact waters of the state	Immediately following discovery
Adams County LEPC	N/A	720-523-6602	Any spills that require notification as discussed above	As soon as possible
Oil Spill Removal Organization				
Freedom Drilling Services	Arin Hatfield	970-673-8465 (o) 303-827-8595 (m)	When assistance is needed with controlling and/or cleaning up a spill.	When it is determined that such assistance is needed.

*Link to ECMC Form 19

https://ECMC.state.co.us/forms/pdf_forms/form19.pdf

WILDLIFE PROTECTION PLAN



POCO Operating

Wakeman 20-17 Pad

Sec. 20 T1S R65W (SWSE)

Adams County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application and
Consistent with the requirements of Rule 304.c.(17) & 1201.a.

November 02, 2022

Revised: August 6, 2023

Providence Energy Operating LLC Adams County, Colorado

Wildlife Protection Plan

Project Summary:

Providence Energy Operating LLC's ("POCO's") proposed Wakeman 20-17 Pad "Location" is in Township 1 South, Range 65 West, Section 20 in Adams County, Colorado. The proposed Location is fee surface with a total pad disturbance of 7.807 acres, which includes the active working pad surface of 5.380 acres. During the interim reclamation and production phase 2.010 acres will be reclaimed, leaving a disturbed production area of 5.797. Construction is anticipated to begin no sooner than April 2023.

Introduction

The Wildlife Protection Plan serves as a framework for wildlife protection and communication tool to foster cooperative relationships between POCO and its stakeholders. Implementation of this plan will serve to avoid or minimize adverse effects to wildlife populations, and their associated habitats.

This Wildlife Protection Plan addresses POCO's plans to comply with all applicable operating requirements and includes a site-specific environmental site assessment. Additional measures may be implemented based on any new environmental constraints that arise.

Location Description

The location boundaries are defined as the limits of disturbance (LOD) for the proposed pad. The Wakeman 20-17 location is in Section 20 of Township 1 South, Range 65 West in Adams County, Colorado.

Operating Requirements

Below is a review of the operating requirements described in Rule 1202 and POCO's plans to adhere to those which are applicable to the location. POCO's contractors will also comply with all applicable operating requirements.

- A. The operating requirements identified in Rule 1202.a apply to Oil and Gas Operations statewide unless the Operator obtains a signed waiver from Colorado Parks and Wildlife (CPW) and the Director or Commission approves a Form 4, Sundry Notice or Form 2A documenting the relief.

In black bear habitat, Operators will install and utilize bear-proof dumpsters and trash receptacles for food-related trash at all facilities that generate trash.

The Wakeman 20-17 is not located within black bear habitat

- B. Operators will disinfect water suction hoses and water transportation Tanks withdrawing from or discharging into surface waters (other than contained Pits) used previously in another river, intermittent or perennial stream, lake, pond, or wetland and discard rinse water in an

approved disposal facility. Disinfection practices will be repeated prior to completing work and before moving to the next waterbody. Disinfection will be performed by scrubbing and pre-rinsing equipment away from water bodies to remove all mud, plants, and organic materials and then by implementing one of the following practices

Spray/soak equipment with a CPW-approved disinfectant solution capable of killing whirling disease spores and other aquatic nuisance species defined by CPW; or B. Spray/soak equipment with water greater than 140° Fahrenheit for at least 10 minutes. All equipment and any compartments they contain will be completely drained and dried between each use.

POCO will utilize surface water to hydraulically fracture the 16 subject Wakeman 20-17 wells. POCO and its vendors will adhere to the above-listed requirements.

- C. At new and existing Oil and Gas Locations, Operators will not situate new staging, refueling, or Chemical storage areas within 500 feet of the Ordinary High Water Mark (“OHWM”) of any river, perennial or intermittent stream, lake, pond, or wetland.

The Wakeman 20-17 is not within 500 feet of the OHWM of any river, perennial or intermittent stream, lake, pond, or wetland.

- D. To prevent access by wildlife, including birds and bats, Operators will fence and net or install other CPW-approved exclusion devices on new Drilling Pits, Production Pits, and other Pits associated with Oil and Gas Operations that are intended to contain Fluids.

Such fencing and netting or other CPW-approved exclusion device will be installed within five days after the cessation of active drilling and completion activities and maintained until the Pit is removed from service and dried or closed pursuant to the Commission’s 900 Series Rules.

The Director may require an operator to fence and net or install other CPW-approved exclusion devices on an existing Pit if the Director determines that the installation is necessary and reasonable to protect Wildlife Resources based on the analysis required by Rule 909.j, or other information that demonstrates additional protections for Wildlife Resources are appropriate.

Operators will properly maintain and repair all fences, nets, and CPW-approved exclusion devices required by this Rule 1202.a.(4).

The Wakeman 20-17 location will not include Drilling Pits, Production Pits, or other Pits associated with Oil and Gas Operations.

- E. For trenches that are left open for more than 5 consecutive days during construction of Pipelines regulated pursuant to the Commission’s 1100 Series Rules, Operators will install wildlife escape ramps at a minimum of one ramp per 1/4 mile of trench.

If a trench is left open for more than five consecutive days during pipeline construction, POCO will install wildlife escape ramps at a minimum of one ramp per ¼ mile of trench.

- F. When conducting interim and final Reclamation pursuant to Rules 1003 and 1004, Operators will use CPW-recommended seed mixes for Reclamation when consistent with the Surface Owner's approval and any local soil conservation district requirements.

POCO will use CPW-recommended seed mixes for interim and final reclamation when consistent with the Surface Owner's approval and any local soil conservation district requirements.

- G. Operators will use CPW-recommended fence designs when consistent with the Surface Owner's approval and any Relevant Local Government requirements.

POCO will use CPW-recommended fence designs when consistent with the Surface Owner's approval and any Relevant Local Government requirements.

- H. Operators will conduct all vegetation removal necessary for Oil and Gas Operations outside of the nesting season for migratory birds (April 1 to August 31). For any vegetation removal that must be scheduled between April 1 to August 31, Operators may implement appropriate hazing or other exclusion measures prior to April 1 to avoid take of migratory birds. If hazing or other exclusion measures are not implemented, Operators will conduct pre-construction nesting migratory bird surveys within the approved disturbance area prior to any vegetation removal during the nesting season. If active nests are located, Operators will provide work zone buffers around active nests.

POCO will conduct all vegetation removal necessary for Oil and Gas Operations outside of the nesting season for migratory birds (April 1 to August 31). For any vegetation removal that must be scheduled between April 1 to August 31, POCO may implement appropriate hazing or other exclusion measures prior to April 1. If hazing or other exclusion measures are not implemented, POCO will assign a qualified contractor to conduct pre-construction nesting migratory bird surveys within the approved disturbance area prior to any vegetation removal during the nesting season. If active nest(s) are located, POCO will provide work zone buffers around active nests.

- I. Operators will treat Drilling Pits, Production Pits, and any other Pit associated with Oil and Gas Operations containing water that provides a medium for breeding mosquitoes with Bti (*Bacillus thuringiensis v. israelensis*) or take other effective action to control mosquito larvae that may spread West Nile virus to Wildlife Resources. Such treatment will be conducted in a manner which will not adversely affect aquatic Wildlife Resources.

The Wakeman 20-17 will not include Drilling Pits, Production Pits, or other Pits associated with Oil and Gas Operations.

- J. Operators will employ the following minimum Best Management Practices on new Oil and Gas Locations with a Working Pad Surface located between 500 feet and 1000 feet

hydraulically upgradient from a High Priority Habitat identified in Rule 1202.c.(1). Q–S:

1. Contain Flowback and Stimulation Fluids in Tanks that are placed on a Working Pad Surface in an area with downgradient perimeter berming;
2. Construct lined berms or other lined containment devices pursuant to Rule 603.o around any new crude oil, condensate, and produced water storage tanks that are installed after January 15, 2021
3. Inspect the Oil and Gas Location on a daily basis, unless the approved Form 2A provides for different inspection frequency or alternative method of compliance;
4. Maintain adequate spill response equipment at the Oil and Gas Location during drilling and completion operations; and
5. Not construct or utilize any Pits, except that Operators may continue to utilize existing Pits that were properly permitted, constructed, operated, and maintained in compliance prior to January 15, 2021.

The Wakeman 20-17 is not located between 500 feet and 1000 feet hydraulically upgradient from a High Priority Habitat identified in Rule 1202.c.(1). Q-S.

- K. Operators will bore, rather than trench, Flowline and utility crossings of perennial streams identified as aquatic High Priority Habitat unless the Operator obtains a signed waiver from CPW and the Director or Commission approves a Form 4 or Form 2A documenting the relief. When installing culverts or bridges, such structures will not impact or prevent the passage of fish unless otherwise directed by CPW.

Flowlines and utilities associated with the Wakeman 20-17 location will not cross any perennial streams identified as aquatic High Priority Habitat.

Rules 1202.c and 1202.d describe operating requirements for proposed Oil and Gas Operations that are located within High Priority Habitats. This plan addresses proposed locations that are located outside of High Priority Habitat and, therefore, these rules do not apply to any locations for which this plan is provided.

Protective Measures

Seasonal avoidance of important breeding, nesting, and winter habitats is the primary protection measure to reduce oil and gas development impacts on wildlife populations, productivity, and habitat use. Additional conservation measures will be incorporated through project design and/or as COA(s). POCO will also consult CPW when necessary, regarding protection measures. Lastly, data collected during monitoring efforts will be used to determine the appropriateness and effectiveness of these measures throughout POCO's project area. Protection measures may be reduced or adjusted if one or more of the following occur:

- Waiver: A lease stipulation may be waived if a determination is made by COGCC, in consultation with CPW, that the proposed action will not adversely affect the species in question.
- Exception: An exception to these protection measures may be granted by COGCC, in coordination with CPW, if POCO submits a plan which demonstrates that impacts from the proposed action will

not be significant or can be adequately mitigated.

- Modification: Modifications may be made by CPW if it is determined that portions of the area do not include habitat protected by the stipulation.

Guidance for preparing PODs and/or protective measures applied as COAs provide a full range of practicable means to avoid or minimize harm to wildlife species and their habitats. POCO will minimize potential impacts to wildlife by incorporating general applicable Wildlife Protection Plan programmatic guidance into PODs. Not all measures may apply to each site-specific development area and means to reduce harm are not limited to those identified in the Wildlife Protection Plan. This guidance may change over time if new conservation strategies become available for Special Status Species or monitoring indicates the measure is not effective or unnecessary.

The operating requirements are considered features or project design criteria to be used during POD preparation. The design of projects can incorporate conservation needs for wildlife species or measures can be added as COAs. These types of conservation actions offer flexibility for local situations and help minimize or eliminate impacts to the species of interest.

Summary

The Wakeman 20-17 location is not located within any mapped High Priority Habitats. Therefore, a Wildlife Mitigation Plan is not needed per 1201.b. and this Wildlife Protection Plan fulfills the obligations of Rule 1201.a. No sensitive wildlife resources were identified during the site visit and, therefore, no additional measures are recommended at this time. POCO and all associated contractors agree to adhere to all relevant operating requirements outlined in this Wildlife Protection Plan. In addition to the standard operating requirements, supplementary measures and protocols may be implemented in response to specific needs identified at the Site.

References and Sources

Bibliography

Colorado Parks and Wildlife (CPW). High Priority Habitat (HPH) data.

Available online at: https://cogccmap.state.co.us/cogcc_gis_online/. Accessed on February 22, 2022.

CPW. 2020. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors.

Available online at <https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/Raptor-Buffer-Guidelines.pdf>. Accessed on January 4, 2022.

N



LEGEND

- - - - - OIL & GAS LOCATION
- WORKING PAD SURFACE

5280' Offset
from Working
Pad Surface



NOTES:
• There are no High Priority Habitats within 1 mile of the proposed working pad surface.

POCO OPERATING

WAKEMAN 20-17 PAD
SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 800'

WILDLIFE HABITAT DRAWING

Community Outreach Plan



POCO Operating

Wakeman 20-17

Sec. 20 T1S R65W (SWSE)

Adams County, Colorado

Surface: Fee

Providence Energy Operating LLC Adams County, Colorado

Community Outreach Plan

Project Summary:

Providence Energy Operating LLC's ("POCO's") proposed Wakeman 20-17 Pad "Location" is in Township 1 South, Range 65 West, Section 20 in Adams County, Colorado. The proposed Location is fee surface with a total pad disturbance of 7.807 acres, which includes the active working pad surface of 5.380 acres. During the interim reclamation and production phase 2.010 acres will be reclaimed, leaving a disturbed production area of 5.797.

Description of Area

The Wakeman 20-17 location is in an agricultural community east of Interstate 76 and 136th Avenue in Adams County, Colorado. Surrounding land uses of the proposed location are agriculture and industrial.

There are no future plans for residential development within 2 miles. Surrounding future land uses are industrial, agricultural and mixed used commercial.

There are five (5) residential building units (RBU) within 2,000 feet of the Working Pad Surface (WPS). The location is not within a Disproportionately Impact Community (DIC). The closest DIC is 2 miles south of the location. POCO has obtained informed consents from four of the five RBUs within 2000' of the WPS. POCO will continue efforts to obtain informed consent from the remaining RBU. Multiple attempts have been made thus far but POCO has not been able to contact the owner.

PLANNED COMMUNITY CONSULTATION AND COMMUNICATION

There are multiple opportunities for surrounding landowners to comment on the county and state process.

Because the area is not linguistically isolated, and all owners and tenants within 2,000 feet speak English as their primary language, POCO will send all notices and communications in English. The Operator will be available to owners and tenants during daytime and evening hours and will provide interpretation services, if requested.

Per the Adams County permitting process, POCO Operating held a neighborhood meeting on October 26, 2022, as part of the Adams County permitting process. All parcel owners within 1 mile of the property line on which the proposed location will be permitted on, were invited to the informational neighborhood meeting. The meeting was held as an open house, with posters set up according to phases of operations. POCO Representatives, in charge or regulatory, land and operations were present to speak to each phase of operations and answer any questions. Three (3) people from 2 separate households attended the meeting as well as Greg Dean, Adams County Local Government Designee.

POCO will consider owners and tenant's suggested mitigation measures and concerns related to public health, safety, and welfare.

Communication During Local Permitting:

Providence will continue to engage with owners and tenants within 2,000 feet of the Working Pad Surface and will be sending them information on the proposed location. The informational packet will include the following information:

- Description and map of the physical siting of the existing location and expansion, including the legal description.
- Description, proposed timeline, and proposed duration of operations that are planned. These operations include, but are not limited to, construction, drilling, completions, production and reclamation of the location.
- Number and orientation of the proposed additional wells including equipment.
- Description of Best Management Practices to mitigate impacts to noise, light, odor, dust, and traffic.
- Contact Information for POCO.

After ECMC Oil and Gas Development Plan (OGDP) Application Submittal:

- As required by ECMC Rule 303.e, a Completeness Determination Notice was sent.
- Per ECMC Rule 309.c, any additional consultations will be addressed, if required.
- Continue to engage with all owners and tenants within 2,000 feet of the Working Pad Surface prior to the OGDP Hearing.

Prior to and after Commencement of Operations:

- Continue to proactively engage with owners and tenants within 2,000 feet of the Working Pad Surface to provide updates on the development timeline and to answer any questions or concerns.
- Send all required COGCC notices as pertains to the permitting process. POCO Public Relations team will frequently send courtesy notices to owners and tenants to ensure they have the most up to date information.



POCO Operating

December 29, 2022

Ms. Katherine Wakeman
13721 N. Powhaton Road
Brighton, CO 80603

Operator Name/Contact:

Providence Operating LLC DBA POCO Operating
Meghan A. Grimes
Senior Manager of ESG – Compliance and Regulation
720-256-8774
mgrimes@providence-energy.com

RE: Wakeman Oil and Gas Development Plan
Township 1 South, Range 65 West, 6th P.M.
Sections 17 & 20: All
Surface Location: SWSE Section 20 (Location ID 461092)
Nearby Public Crossroads: 136th Ave. and Harvest Mill Rd.

REQUEST FOR INFORMED CONSENT

Oil and gas operations are regulated in Colorado by the Colorado Oil and Gas Conservation Commission (“COGCC”). An oil and gas company, or “operator”, may apply for permits from the COGCC to conduct oil and gas operations such as drilling wells to produce oil and natural gas. Effective January 15, 2021, operators must have an approved Oil and Gas Development Plan (“OGDP”) to conduct new oil and gas operations. An approved OGDP gives an operator permission to build one or more new oil and gas locations, or expand existing locations, which may include wellpads where oil and gas wells may be drilled.

COGCC’s rules generally do not allow new oil and gas development within 2,000 feet of a residential or high-occupancy building such as a home or apartment building.¹ This is called a 2,000 foot siting requirement. However, there are some exceptions to this siting requirement. One exception is if the owners and tenants of every occupied building within 2,000 feet of the proposed development provide **informed consent** for the proposed oil and gas operations.

You are receiving this letter because Providence Operating LLC DBA POCO Operating (“POCO”) plans to submit an application to the COGCC for approval of an OGDP that proposes new oil and gas operations within 2,000 feet of the building where you live. There are two specific COGCC

¹ The terms “building” and “home” in this letter include both the COGCC defined terms Residential Building Units and High-Occupancy Building Units. Because some High-Occupancy Building Units are commercial buildings like nursing homes and hospitals, this letter uses the term “live” to refer to “owning,” “living in,” and “working in” a home or building.

rules that address informed consent of building owners or tenants. The rule that applies in your case is:

COGCC Rule 604.b.(1), because the operator is proposing to build an oil and gas location (known as a “working pad surface”) between 500 and 2,000 feet from the building that you live in.

POCO is asking for your informed consent to this proposed OGDG. If you choose to provide consent, this letter will be included in the application materials and may be made public.

You are not required to consent to the development proposed near your home. If you do not consent, the operator may decide to pursue development at a different location, or may revise their proposal to meet additional COGCC conditions. The operator may also choose to undergo a more stringent application process before the COGCC. This may involve seeking a “variance” from the Commission’s rules, or demonstrating that its plans for the operations will avoid, minimize, or mitigate impacts on nearby residents like you through a process governed by COGCC Rule 604.b.(4). So, if you do not consent, it is still possible that the operator will obtain the COGCC’s permission to conduct the oil and gas operations.

Please note that the operator must also obtain permission from your local government to conduct the oil and gas operations if your local government has its own oil and gas permitting process. The relevant local government(s) for this OGDG application is Adams County, Colorado. Under the rules of this local government, a local permit is required. POCO previously received an approved Local Final Permit Decision from Adams County approving the siting and the related surface disturbance for the wellpad associated with the Wakeman OGDG, but the same has now expired. Concurrently with the filing of an application for approval of the Wakeman OGDG with the COGCC, POCO is seeking approval of an amended local permit through Adams County’s permit revision process.

To obtain your informed consent, an operator is required to provide you information about the nature, timeline, and scope of the oil and gas development that it proposes to conduct near your home, and the potential impacts that you may experience as a result of that development. This information must be presented in a language that you understand, and the operator must answer any questions that you have about the information. POCO is providing this information to you so that you can make an informed decision about whether or not to give your consent to the proposed oil and gas development that would be located within 2,000 feet of your home. To ensure that you fully understand the implications of providing your consent, at a minimum, POCO is providing you with the following information, attached hereto as Exhibit A:

1. Description of the physical siting of the proposed location, including legal description, and a map showing the proximity to your home;
2. How this proposed location was selected using an Alternative Location Analysis process;
3. A description of the mineral acreage to be developed from this proposed location, and the number and orientation of wells, types of equipment, and other on- and off-location infrastructure related to anticipated operations;
4. A description, proposed timeline, and expected duration of different operations that are planned, including construction, drilling, completions, flowback, interim reclamation, production, and final reclamation;

- impacts, along with the operator's planned mitigation ("Best Management Practices") designed to reduce the impacts you may experience during each state of the operation;
6. A description of potential adverse or beneficial impacts that you may experience as a result of planned operations at this location, including but not limited to scientific information discussing potential health impacts that are likely attributable to living in close proximity to oil and gas development; and
 7. A point of contact for you to obtain additional information from POCO, and how you can access additional information from the COGCC and your local government.²

Because your home is within 2,000 feet of the proposed oil and gas development, you qualify as an "affected person" under COGCC's rules.³ That means you have a legal right to participate in all COGCC proceedings to decide whether or not to grant the operator its OGDG permit to conduct oil and gas operations near your home. You have the ability to submit written public comments to the COGCC's Staff while the application is pending. You have the right to request the COGCC to conduct a local public hearing at a location near where you live. You have the right to provide written and oral public comments to the Commissioners about the proposed development while the Commission is considering the application. You also have the right to petition to participate as an "affected person," which means you can exercise your rights in a process similar to litigation in court, before both a COGCC Hearing Officer and the Commissioners themselves.

Before you sign this document, you must read all the information provided to you by the operator.

Please initial below to certify that:

- (1) you have read all the information provided to you: KLW
- (2) you understand that information: KLW

Informed Consent Decision:

By signing this document, you are informing the COGCC that you have made a fully-informed decision on the oil and gas development proposed for the Wakeman OGDG near the building that you own or live in. **YOU ARE NOT OBLIGATED TO SIGN THIS DOCUMENT. YOU HAVE THE RIGHT TO WITHHOLD YOUR CONSENT TO THE OIL AND GAS DEVELOPMENT NEAR YOUR HOME.** Your signature does not grant you additional rights or waive your existing rights, including your right to participate in COGCC's permitting proceedings as an "affected person." Your signature is only relevant to the proposed oil and gas development in this OGDG. It is not transferable to any other proposal or location or permit application. This document will be maintained as part of the public record in the hearing of this OGDG with the Commission.

I have read and I understand the information provided to me regarding the proposed Oil and Gas Location and its associated operations. The language was provided to me in a language that I understand. I have had the opportunity to ask POCO questions. I

² In addition to this information, the operator will also provide you with additional information required by COGCC at later stages of the application process, should the operator choose to move forward with the OGDG application process after learning whether you choose to provide your informed consent.

³ Attached hereto as Exhibit B is information prepared by the COGCC explaining the potential impacts of living within 2,000 feet of oil and gas operations.

understand the potential impacts of the development under the proposed Wakeman OGDG, including but not limited to potential impacts to my health. I also understand the benefits that I may receive as a result of the development.

- I AGREE to the proposed location and associated oil and gas operations under the Wakeman OGDG, and voluntarily provide my informed consent.***
- I DO NOT give my consent for the proposed location and associated oil and gas operations under the Wakeman OGDG.***

Signature: Katherine L. Wakeman

Name (Printed): Katherine L. Wakeman

Date: Jan. 9, 2023

Language other than English that materials were provided in: N/A

Exhibit A

POCO hereby provides the following information pertaining to its proposed Wakeman OGDG:

1. Description of the physical siting of the proposed location, including legal description, and a map showing the proximity to your home.

The Wakeman well pad (COGCC Location ID 461092) (“Wakeman Pad”) upon which POCO’s proposed oil and gas operations under the Wakeman OGDG will occur is located in the SW1/4SE1/4 of Section 20, Township 1 South, Range 65 West, 6th, P.M., Wattenberg Field, Adams County, Colorado. The Wakeman Pad is a new oil and gas location which has not yet been constructed. A map depicting the location of the Wakeman Pad, and the proximity of the same to your home, is attached hereto as Exhibit A-1.

2. How this proposed location was selected using an Alternative Location Analysis process.

During the initial mineral development evaluation, POCO assessed three (3) alternative locations in addition to the location of the proposed Wakeman Pad in accordance with COGCC Rule 304.b.(2). Of the three (3) alternatives, all were located within a 2,000-foot radius of an existing RBU, such that none of the alternative locations were outside the 2,000-foot radius of an existing RBU. After assessing the location of the proposed Wakeman Pad, in addition to the three (3) alternatives, POCO determined that the proposed location of the Wakeman Pad would result in the least impacts and will provide public health, safety, welfare, environmental, and wildlife protections to the owners of the five (5) RBUs that are substantially equivalent to the Commission Rule 604.b.(1) 2,000-foot requirement.

3. A description of the mineral acreage to be developed from this proposed location, and the number and orientation of wells, types of equipment, and other on- and off-location infrastructure related to anticipated operations.

POCO’s Wakeman OGDG proposes the drilling and operation of 16 new horizontal wells to produce oil and gas from the Niobrara, Codell, Fort Hays and Carlile Formations in Sections 17 and 20, Township 1 South, Range 65 West, 6th P.M., Adams County, Colorado (“Application Lands”). Sections 17 and 20 have been included within a drilling and spacing unit (“DSU”), containing approximately 1,280 acres, for the production of oil, gas and associated hydrocarbons from the Niobrara and Codell Formations, pursuant to Commission Order No. 407-2516 (Cause No. 407, Docket No. 171000663), entered August 22, 2018, as of July 30, 2018. This spacing order approved up to 16 horizontal wells within the DSU.

The Wakeman Pad is a new oil and gas location which has not yet been constructed. POCO previously received an approved Form 2A for the wells to be drilled from the Wakeman Pad, but the same was not constructed prior to the expiration of the subject Form 2A on January 24, 2022. Concurrently with the filing of its application for approval of the Wakeman OGDG with the COGCC, POCO is submitting a new a new Form 2A for the development of 16 new horizontal wells within the Application Lands from the proposed amended Wakeman Pad, pursuant to Rule 303.a.(2) and Rule 304, Document No. 403228818.

POCO has obtained approved permits to drill (collectively, the “APDs”) for 16 horizontal wells in the Application Lands as set forth below. All of these APDs were approved by the Director of COGCC on May 10, 2021 and remain in effect, expiring on May 9, 2024. None of these wells have been drilled yet. All of these wells, when drilled, will target the Niobrara and Codell Formations.

<u>Well Name</u>	<u>Document No.</u>	<u>API No.</u>
Wakeman 20-17-1CDH	402519300	05-001-10401-00
Wakeman 20-17-1NBH	402519533	05-001-10392-00
Wakeman 20-17-1NCH	402519594	05-001-10387-00
Wakeman 20-17-1NAH	402519493	05-001-10397-00
Wakeman 20-17-2CDH	402519601	05-001-10388-00
Wakeman 20-17-2NBH	402519722	05-001-10390-00
Wakeman 20-17-2NCH	402519746	05-001-10395-00
Wakeman 20-17-2NAH	402519652	05-001-10389-00
Wakeman 20-17-3CDH	402519829	05-001-10398-00
Wakeman 20-17-3NBH	402519856	05-001-10399-00
Wakeman 20-17-3NCH	402519882	05-001-10402-00
Wakeman 20-17-3NAH	402519852	05-001-10391-00
Wakeman 20-17-4CDH	402519889	05-001-10396-00

Wakeman 20-17-4NBH	402520089	05-001-10394-00
Wakeman 20-17-4NCH	402520359	05-001-10393-00
Wakeman 20-17-4NAH	402520057	05-001-10400-00

All wells will be drilled and completed in a single drilling round. The laterals for these wells will be about two (2) miles in length and will be drilled from south to north.

Wakeman Pad construction is generally comprised of mobilizing/demobilizing various combinations of backhoes, dozers and/or graders to create a relatively flat surface that can accommodate equipment to drill, complete and produce wells. Just prior to grading, implements/designs to handle stormwater are installed on and around the Wakeman Pad. Once stormwater measures are in place and the grade is set, the location is plated with road base to both stabilize and prevent erosion/dust. This phase of construction takes place prior to drilling start.

The production facility construction is generally comprised of setting and connecting all equipment that will be process production from the wells. This phase of construction typically takes place in parallel with the drilling and completions phase of development. Subject to COGCC approval of the Wakeman OGDG application, the Wakeman Pad will be constructed to cover approximately 9.367 acres of new surface disturbance, with an estimated 7.807 acres being associated with the well pad and an estimated 1.56 acres being associated with upgrades to an existing 2-track road and construction of a new access road. Cumulative acres of disturbance concerning the Wakeman Pad during drilling and completion operations associated with the 16 new horizontal wells permitted in the APDs set forth and requested in the Wakeman OGDG application will be 9.367 acres. Once drilling and completion operations associated with the 16 new horizontal wells requested in the Wakeman OGDG application are finished, the Wakeman Pad will be interim reclaimed to a total of approximately 5.797 acres

The Wakeman Pad will include a new access road. In addition, the production facility will be comprised of minimal tanks and associated equipment. All products will be sold directly into a pipeline, which alleviates truck traffic as well as additional long-term equipment needed on the Wakeman Pad. A drilling rig will be in place during the drilling phase. This project will use both water based and oil based mud for drilling operations. Water production is minimal in this area and will be hauled off by a truck as needed.

4. A description, proposed timeline, and expected duration of different operations that are planned, including construction, drilling, completions, flowback, interim reclamation, production, and final reclamation.

Operations will be conducted in the following stages which are estimated to take the following amounts of time.

Stages	Time
Wakeman Pad Construction	26 Days
Facilities Construction	70 Days
Drilling	132 Days
Completions (Fracturing)	114 Days
Drillout	26 Days
Flowback/Production	365+ Days

Stages may not occur simultaneously at the Wakeman Pad. Construction of the Wakeman Pad is anticipated to begin in the third quarter of 2023.

- A. Construction Phase estimated to begin Q3 2023
- B. Drilling Phase estimated to begin Q4 2023
- C. Completions Phase estimated to begin Q4 2023
- D. Production Phase estimated to begin Q1 2024
- E. Interim Reclamation estimated to begin Q1 2024
- F. Final Reclamation estimated to begin Q1 2044

5. A description of the different immediate impacts that you may experience during each stage of operations, which may include noise, vibration, light, odor, dust, traffic, and visual impacts, along with the operator’s planned mitigation (“Best Management Practices”) designed to reduce the impacts you may experience during each state of the operation.

You may experience certain impacts during each stage of the proposed operations on the Wakeman Pad. Those potential impacts are largely mitigated by the use of sound walls, downward directed lighting designed to stay within the sound walls, and use of water or products intended to minimize dust.

6. A description of potential adverse or beneficial impacts that you may experience as a result of planned operations at this location, including but not limited to scientific information discussing potential health impacts that are likely attributable to living in close proximity to oil and gas development.

Attached hereto as Exhibit B is information prepared by the COGCC explaining the potential impacts of living within 2,000 feet of oil and gas operations.

7. A point of contact for you to obtain additional information from POCO, and how you can access additional information from the COGCC and your local government.

Meghan Grimes, who's email address and phone number are stated on the first page of this letter, is a point of contact at POCO whom you may reach out to for additional information or with questions.

The COGCC has prepared information about living within 2,000 feet of oil and gas operations and the same has been attached to this letter as Exhibit B. Additional information and resources are available on the COGCC website (cohcc.state.co.us). The phone number for the COGCC is 303-894-2100.

The Relevant Local Government pertaining for the Wakeman OGD is Adams County, Colorado. You may obtain additional information from the Relevant Local Government at their website: www.adcogov.org. Gregory Dean is the contact person for Adams County; his phone number is 720.523.6891 and his email address is gdean@adcogov.org.

Additionally, the following information sheets prepared by the COGCC are also attached for your information and use:

- Procedural Steps for the Review of OGDs (as required by COGCC Rule 303.e(2).C) (see Exhibit C);
- Public Comments (as required by COGCC Rule 303.e(2).D) (see Exhibit D);
- Hydraulic Fracturing Treatment (as required by COGCC Rule 303.e(2).E) (see Exhibit E);
and
- OGD Status Information (as required by COGCC Rule 303.e(2).G) (see Exhibit F).

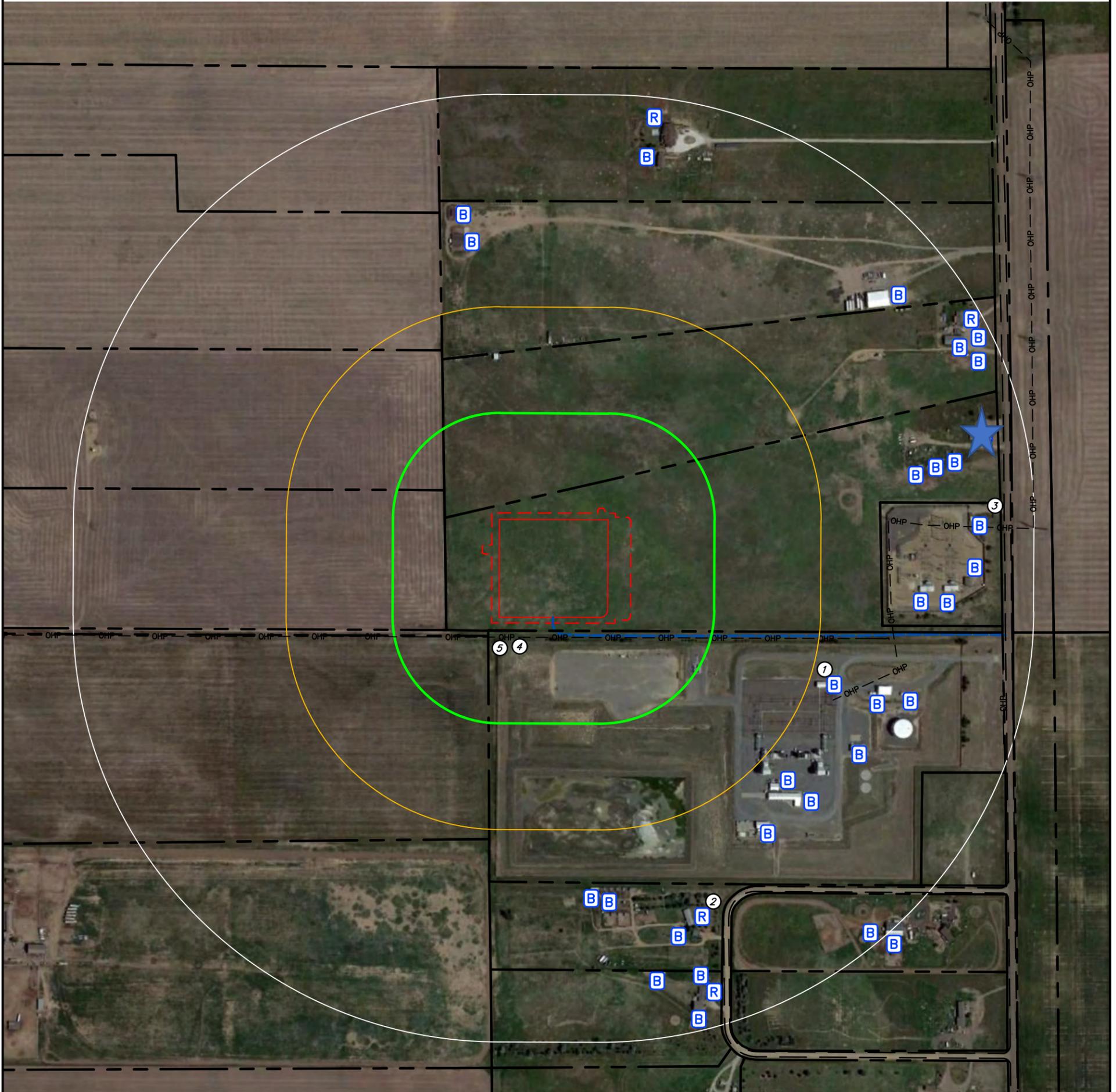
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12/29/2022
Exhibit A-1

Exhibit A-1

See map attached hereto, showing the proximity to your home to the Wakeman Pad, being the location of POCO's proposed Wakeman OGDG.



#	CULTURAL FEATURE	FROM EDGE OF WORKING PAD SURFACE
1	BUILDING	SE 1031'±
2	RESIDENTIAL BUILDING UNIT	SE 1428'±
*	HIGH OCCU. BUILDING UNIT	NW 5280'+
*	DESIGNATED OUTDOOR ACTIVITY AREA	NW 5280'+
3	PUBLIC ROAD (POWHATON ROAD)	EAST 1861'±
4	ABOVE GROUND UTILITY	SOUTH 95'±
*	RAILROAD	NW 5280'+
5	PROPERTY LINE	SOUTH 63'±
*	SCHOOL FACILITY	NW 5280'+
*	CHILD CARE FACILITY	NW 5280'+
*	DISPROPORTIONATELY IMPACTED COMMUNITY	SOUTH 5280'+
*	RESIDENTIAL BUILDING UNIT, HOBU, OR SCHOOL FACILITY WITHIN A DISPROPORTIONATELY IMPACTED COMMUNITY WITHIN 2000' OF THE WORKING PAD SURFACE	SOUTH 5280'+



LEGEND

- - - - - = OIL & GAS LOCATION
- = WORKING PAD SURFACE
- - - - - = PROPOSED ACCESS ROAD
- = 500' OFFSET FROM WORKING PAD SURFACE
- = 1000' OFFSET FROM WORKING PAD SURFACE
- = 2000' OFFSET FROM WORKING PAD SURFACE
- - - - - = PROPERTY LINE
- OHP - - - OHP - - - = POWER LINE
- ==== = ROAD
- B = BUILDING
- R = RESIDENTIAL BUILDING UNIT
- ★ = Your house

CULTURAL FEATURE	NUMBER OF FEATURE INSIDE 0'-500' OFFSET	NUMBER OF FEATURE INSIDE 501'-1000' OFFSET	NUMBER OF FEATURE INSIDE 1001'-2000' OFFSET
BUILDING UNITS (COMMERCIAL)	0	0	0
RESIDENTIAL BUILDING UNITS	0	0	5
HIGH OCCUPANCY BUILDING UNITS	0	0	0
SCHOOL PROPERTIES	0	0	0
SCHOOL FACILITIES	0	0	0
DESIGNATED OUTDOOR ACTIVITY AREAS	0	0	0

- NOTES:**
- Bearings & distances shown are from the nearest edge of working pad surface.
 - * Cultural feature is outside of view port.

POCO OPERATING

WAKEMAN 20-17 PAD
 SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
 ADAMS COUNTY, COLORADO

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 500'

CULTURAL FEATURES MAP



UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

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Exhibit B

Exhibit B

See COGCC information sheet attached hereto re: living within 2,000 feet of oil and gas operations.



COGCC FACT SHEET: OIL AND GAS WITHIN 2,000 FEET

This fact sheet is being provided because an operator has submitted, or is planning to submit, drilling permits to the COGCC for an oil & gas location within 2,000 feet of your residence. COGCC wishes to inform individuals that live near planned oil and gas operations that the Colorado Department of Public Health and the Environment (CDPHE) recently published a study that addresses potential health risks from oil and gas development.

On October 17, 2019, a study titled "[Final Report: Human Health Risk Assessment for Oil & Gas Operations in Colorado](#)" was released by CDPHE. The health risk modeling study used actual emission data that was collected in previous studies of oil and gas operations to mathematically estimate (model) hypothetical chemical concentrations at distances between 300 and 2,000 feet in different meteorological conditions and other controlling factors to estimate potential for exposures.

The individual chemical concentrations modeled from hypothetical well pads in the study were below health based guidelines for chronic (long-term) health impacts and were within acceptable risk ranges for cancer, as established by the United States Environmental Protection Agency. The study did not determine any elevated risk of chronic health impacts from any single substance at 500 feet or greater although the study showed slightly elevated risk of blood and nervous system effects from multiple chemicals at 500 feet but not at 2,000 feet. Further, the study did find that there may be potential risks of acute (short term) impacts at all modeled distances, particularly during the drilling, hydraulic fracturing and flowback phases of oil and gas development. The acute risks are primarily associated with benzene, which under worst-case conditions may be temporarily at high enough concentrations to cause short-lived symptoms such as headaches, dizziness, and respiratory, skin, and eye irritation. The modeled concentrations that were high enough to cause these symptoms are from the modeling parameters that represent potential worst-case conditions (i.e. certain meteorological conditions, peak emissions, continuous exposures, etc.).

The study is not based on actual reports of symptoms, nor is it based on actual measurements up to 2,000 feet, rather, it only reports that there are potential impacts under worst-case conditions. It should also be noted that the study relied on data collected in 2013 to 2016, and since then, there have been upgrades in operational practices and controls, including improved emission controls which are now in common use; additionally, both the COGCC and the CDPHE Air Pollution Control Division have enacted more stringent regulations that apply to current oil and gas operations.

Please contact the COGCC or visit the [COGCC website](#) for additional information regarding permits for planned oil and gas operations. All permits have a 20-day comment period that is available to all members of the public. All permit information can be viewed on the website, including the best management practices (BMPs) and conditions of approval (COAs) that are applied for the protection of public health, safety and welfare or the environment.

The COGCC and CDPHE will be conducting further studies to better understand potential health impacts from oil and gas operations. Please visit the COGCC website and the [CDPHE website](#) for additional information regarding these studies and any updates.

20191120

URLs for embedded links:

1. https://drive.google.com/open?id=1pO41DJMXw9sD1NjR_OKyBJP5NCb-AO0I
2. <http://cogcc.state.co.us/>
3. <https://www.colorado.gov/pacific/cdphe/oghealth>

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Exhibit C

Exhibit C

See COGCC information sheet attached hereto re: Procedural Steps for the Review of OGDGs.



INFORMATION SHEET: PROCEDURAL STEPS FOR THE REVIEW OF OGDPS

(As required by COGCC Rule 303.e.(2).C)

Why am I receiving this information sheet?

Oil and gas operating companies (“Operators”) are required to obtain approval of an Oil and Gas Development Plan (“OGDP”) from the Colorado Oil and Gas Conservation Commission (“COGCC”) prior to undertaking any new operations such as drilling oil and gas wells or building oil and gas locations. When an Operator submits an OGDP application to the COGCC for consideration, and the application has been received and is deemed complete, COGCC staff begins a formal technical review of the application materials, and a public comment period starts.

COGCC has prepared this information sheet to inform the public of the procedural steps involved with the Director’s and Commission’s review of an OGDP, so that the public is informed and may participate in the review process if they choose. As part of the process, Operators must provide this information sheet to certain recipients, like yourself, that include mineral owners within the area of proposed development and all landowners, homeowners, commercial property owners, tenants, and other entities within 2,000 feet of an oil and gas location proposed by a pending OGDP application.

What is an Oil and Gas Development Plan (OGDP)?

An OGDP is an Operator’s plan to develop oil or gas resources (“minerals”) from one or more surface locations. Operators prepare an OGDP and associated application materials, consistent with the requirements of COGCC Rule 303, and submit the plan for approval through the Commission’s Hearings process. The application materials include a hearing application; one or more Form 2A, Oil and Gas Location Assessments; a Form 2B, Cumulative Impacts Data Identification; and a Form 2C, OGDP Certification. The application may also include a request for the establishment

of one or more Drilling and Spacing Units (“DSUs”). The OGDP, along with its associated supporting documents, will be heard at a public hearing where the Commission will make a final determination to approve or deny the OGDP application.

What are the procedural steps involved with the Director’s and Commission’s review of Oil and Gas Development Plans?

1. **OGDP application is submitted:** Operator/ Applicant submits a complete OGDP application with all supporting documents. The written portion of the application is submitted to the COGCC hearings unit via the eFilings system, and Forms 2A, 2B, and 2C are submitted to technical staff via the eForms system. (See Rules 303 & 304)
2. **OGDP application is received:** The COGCC hearings unit reviews the written hearing application, assigns a docket number for the OGDP, and provides public notice for the hearing. (See Rules 303 & 504)
3. **Completeness determination:** The COGCC technical staff and Director review the application materials for completeness. When deemed complete:
 - a. the OGDP application materials are posted on COGCC’s website;
 - b. the Operator provides notice (including this information sheet) to relevant persons;
 - c. the public comment period begins;
 - d. the formal consultation period commences as applicable (including relevant/ proximate local governments and other agencies such as Colorado Parks and Wildlife (“CPW”) or Colorado Department of Public Health and Environment (“CDPHE”)); and
 - e. COGCC staff begin their technical review of the OGDP components. (See Rule 303).

4. **Director's review of application (technical review):** COGCC technical staff conducts the technical review of all application materials to ensure compliance with COGCC Rules, ensure the protection of public health, safety, welfare, the environment, and wildlife resources, and to evaluate potential Cumulative Impacts. The technical review includes analysis and assessment of:
- DSUs and protection of mineral owner's correlative rights;
 - proposed surface locations and alternative locations;
 - downhole and engineering considerations;
 - best management practices;
 - public comments and recommendations provided by consulting agencies;
 - financial assurance; and
 - the need for conditions of approval. (See Rule 306)

Director's recommendation: Once the Director has reviewed the application materials, the Director provides a written recommendation to the Commission in support of the approval or denial of the OGD application. The Director will post the recommendation on COGCC's website, notify relevant parties¹, and submit it to the COGCC hearings unit in preparation for hearing. (See Rule 306.c)

5. **Commission's consideration and final action (public hearing):** The Commission receives the Director's recommendation of the OGD and begins review of the OGD with support from the COGCC hearings unit. The review includes all supporting documents, written testimony, public comments, consulting agency recommendations, and Director's recommendation. The Commission considers the OGD at a public hearing, which may include oral testimony provided during the hearing. The Commission makes a final determination and presents its findings in a written order based on the evidence in the record; the Commission's order to approve or deny the OGD application is final. (See Rule 307)

Where can I get additional information?

For more information about the COGCC administrative hearing process and OGDs, please refer to the COGCC website at <http://cogcc.state.co.us>. You may also contact the COGCC at dnr.ogcc@state.co.us or 303-894-2100. Please note, COGCC staff are not available to provide legal advice. COGCC recommends that you engage an attorney with knowledge of oil and gas matters to assist you with reviewing any offers you receive from an oil and gas operator or other person.

¹ Parties who receive this information sheet will not necessarily be included in the notice of the Director's recommendation. Parties who make a public comment on the Form 2A and include their email address will receive the notice of the Director's recommendation.

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Exhibit D

Exhibit D

See COGCC information sheet attached hereto re: Public Comments.



INFORMATION SHEET: PUBLIC COMMENTS

(As required by COGCC Rule 303.e.(2).D)

Purpose

This information sheet provides details on how to make public comments on an Oil and Gas Development Plan submitted to the Colorado Oil and Gas Conservation Commission via the Form 2A, Oil and Gas Location Assessment permit application.

Why am I receiving this Information Sheet?

You have received this Colorado Oil and Gas Conservation Commission (“COGCC”) information sheet because an oil and gas operator (“the Operator”) has submitted an application for an Oil and Gas Development Plan (“OGDP”), and that application is under review by the COGCC. Per COGCC Rule 303.e.(1), the Operator is required to provide this information to you within seven days of the application materials being posted on the COGCC website.

COGCC Rule 303.d requires the COGCC to open a formal “public comment period” upon posting the OGDP application to our website. This public comment period allows the public to review OGDP applications and their components (i.e., proposed Oil and Gas Locations), and provide comments on those pending permit applications.

How can I provide comments on pending permits in an OGDP?

Members of the public can access OGDP applications through the COGCC website to review permit information and provide comments. Public comments may be made directly on Form 2A, Oil and Gas Location Assessment permit applications (“Form 2A”) through the COGCC website.

1. Go to the COGCC website <https://cogcc.state.co.us>
2. On the green menu bar, click on the “Permits” page. This will take you to the “Drilling and Location Permits Search” tool for Pending Permits.



3. Under “Pending Permits”, find “Oil and Gas Location Assessment Permits (Form 2A)”. Select the county of interest from the dropdown menu and click “Go!”

Pending Permits (Filed ON or AFTER January 15th, 2021)

Oil & Gas Location Assessment Permits (Form 2A):

4. This will generate a table of pending applications and will indicate the status of the public comment period for each permit within the COGCC review process.
5. Scroll through the list of pending permits to find the one you would like to review. You may wish to use “ctrl + f” to search for a specific document number, operator name, or location name.
6. To view the submitted Form 2A and its associated attached documents, click the “Location Name” link for the permit application you wish to view.

Pending Location Permits - All Counties

Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian_Test_4	IN PROCESS	01/26/2021

7. To make a public comment on a specific permit application, click the “Doc Number” link of the permit on which you wish to comment. This will take you to the Public Comment portal.

Pending Location Permits - All Counties

Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian_Test_4	IN PROCESS	01/26/2021

8. In the Public Comment portal, you may review the Form 2A application including the PDF and all attachments.

Selected Well / Location:

Document Number	Form Type
402165141	02A COL

9. To make a public comment, click the “Make Comment” button. A Form will open for you to provide your name, contact information, and your comment. Only the text in the Comment box will be made public; your contact information will be kept confidential by COGCC.

Please fill out the fields below in full to submit your comment.

Name: Email:

Address: Phone Number:

City: State: Zip:

Subject:

Comment:

10. Click the “Submit Comment” button when you are ready to submit your comment.
11. You may also view other public comments and read yours after it is posted by scrolling down on this page (see below about a delay in displaying comments).

How long do I have to submit a comment on a permit?

The Public Comment Period begins once the COGCC Director determines the OGDG application is complete and has been successfully submitted by the operator. The Director will approve the Form 2C, OGDG Certification form, and post the OGDG application on the website for public review.

In order to be considered by the Director and Commission during the review of the OGDG, public comments must be received as follows:

1. Within 30 days from the date that the Director posts the OGDG on the website, OR
2. Within 45 days if the OGDG includes any proposed Oil and Gas Locations within 2,000 feet of a Residential Building Unit, High Occupancy Building Unit, or School Facility within a Disproportionately Impacted Community.

The final day for public comments can be found in the list of all pending permits:

Pending Location Permits - All Counties					
Back		Export to Excel			
Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian Test 4	IN PROCESS	01/26/2021

When the Public Comment Period closes, the date will revert to read “Comments Closed”. The link to the public comment portal will remain active, but comments will no longer be accepted. You will still be able to view any public comments submitted for pending permits.

The Director may extend or reopen the public comment period per Rule 303.g, for up to an additional 30 days for a proposed OGDG if the Director determines an extension or reopening is reasonable in order to obtain public input.

What happens to my comment?

Your comment will become part of the public record of the application and will be reviewed by the applicant,

COGCC staff, Director, and the Commission. COGCC staff may recommend permit conditions in response to comments. But, Staff does not routinely respond individually to comments; instead, COGCC staff will work directly with the applicant to address the site-specific concerns expressed.

Submitted comments may not be immediately visible; it may be a few days before you see your comments posted. This delay allows COGCC supervisory staff to screen for offensive language prior to publication.

What if I want to make my comment to the Commission?

COGCC Staff and the Director review every comment received on a Form 2A permit application. They review the site specific concerns against the totality of the application materials, including the alternative location analysis, cumulative impacts evaluation, and best management practices proposed by the applicant. When the Director makes a recommendation to the Commission to either approve or deny an OGDG, that recommendation will include the consideration of the public comments received.

In their review of an OGDG for a final determination at the administrative hearing, the Commission will have access to the entire record, including your public comment.

Can I remain anonymous?

Yes. Only the “Comment” portion of your submitted comment will be made publicly viewable. Your name and contact information will be kept confidential, and will only be used by COGCC staff to contact you if necessary in the course of permit application review. If you choose to include your name and contact information in the body of your comment text, it will be part of the public record.

Where can I get additional information?

The following links provide guidance and additional information on providing Public Comments.

COGCC Permits Page:

<https://cogcc.state.co.us/permits.html#/permits>

Numerous helpful guidance documents can be found at the link on the COGCC Permits Page:

<https://cogcc.state.co.us/permits2.html#/permithelp>

Daily Activity Dashboard (DAD) is another useful tool and can be used to access the public comment portal as well: <https://cogcc.state.co.us/dashboard.html>

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Exhibit E

Exhibit E

See COGCC information sheet attached hereto re: Hydraulic Fracturing Treatment.



INFORMATION SHEET: HYDRAULIC FRACTURING TREATMENT

(As required by COGCC Rule 303.e.(2).E)

Why am I receiving this information sheet?

The Colorado Oil and Gas Conservation Commission (“COGCC”) prepared this information sheet to provide the public with information related to hydraulic fracturing. Pursuant to Commission Rule 303.e.(2).E, Operators¹ are required to provide this information sheet to mineral owners within the area of proposed development and all landowners, homeowners, commercial property owners, tenants, and other entities within 2,000 feet of a proposed oil and gas location.

What is hydraulic fracturing treatment, and why is it necessary?

Hydraulic fracturing treatment is the process of creating small cracks, or “fractures,” in the rocks of deep, underground geological formations that have oil and natural gas. The fractures enhance the flow of oil and gas from the formation to the oil and gas well where it flows or is pumped up the well to the production equipment located on the surface of the site.

The process of hydraulic fracturing has been used for decades in Colorado, dating back to the 1970s. Operators² continue to improve hydraulic fracturing, and it is now a standard practice used in almost all oil and gas wells in the state, and across much of the country. Hydraulic fracturing has made it possible to produce oil and gas from rock formations that did not often produce oil and gas in the early to middle part of the twentieth century.

What happens before hydraulic fracturing treatment?

The operator uses a drilling rig to drill a “surface hole” and set a steel pipe called “surface casing” in the hole. The surface casing may extend many hundreds of feet, sometimes more than 1,000

feet, underground. The operator places cement on the outside of the surface casing to seal and protect groundwater. The operator tests the surface casing with pressure, then a smaller “production hole” is drilled out the bottom of the surface casing. After completing a formation integrity test, the operator drills down to the geological formation containing oil and gas, usually many thousands of feet underground. The operator lowers a production casing into the production hole, and cement is used to make a seal above the deep oil and gas formation. The operator “completes” the well by placing holes, or “perforations” in the casing at the deep oil and gas formation, to allow oil and gas to flow into the well. The well is then ready for hydraulic fracturing treatment.

What happens during and after hydraulic fracturing treatment?

The operator performs the treatment by using high pressure water pumps to fracture the deep oil and gas rock formation. The pumps push fracturing fluids down the well and out through the perforations, into the oil and gas rock formation. The hydraulic fracturing fluids are mostly water and sand, with a small amount of chemical additives. The sand, also called “proppant,” remains in the fractures to help keep the fractures open allowing oil and gas to flow through the fractures to the perforations.

After hydraulic fracture treatment, the well is allowed to “flowback,” meaning hydraulic fracture fluids, oil, gas, and produced water from the formation flow through the perforations and up the well to the surface where the fluids are separated. The operator sells the oil and gas. Waste products, mostly water produced from the oil and gas formation and hydraulic fracture fluids, are captured and stored for proper treatment or disposal.

¹ “Operator” as defined in COGCC Rules

² Hereinafter, and only for the purpose of describing the hydraulic fracture treatment process, the term “operator” includes the operator itself and all contractors and service providers that the operator hires to perform work.



Overhead view of a multiple-well site with hydraulic fracturing equipment set up inside a sound wall

Common questions and answers about hydraulic fracturing treatment.

Q: How is an oil and gas well designed to be protective of public health, the environment, and wildlife resources?

A: COGCC engineering staff review all well permits to ensure that wells are lined with multiple layers of steel and cement sufficient to isolate groundwater from the deep oil and gas rock formations. The operator's wellbore design must meet COGCC wellbore isolation standards and rules in order to receive a permit to drill.

Surface casing extends from the ground surface to 50 feet or more below groundwater. Production casing is cemented to seal the oil and gas formation in the well and prevent flow between groundwater and the oil and gas formations. The operator performs a well survey, called a "cement bond log," to verify the cement placement around the production casing. Additionally, the operator pressure tests surface equipment and ensures that nearby, "offset" wells that are close enough for pressure communication in the oil and gas formation have properly-rated surface equipment or downhole plugs.

Q: Will hydraulic fracturing treatment cause problems with water wells

A: Water well problems related to hydraulic fracturing in Colorado are rare, which is largely a result of COGCC's long-standing mission to protect Waters of the State of Colorado, including

groundwater. Most recently, the COGCC adopted new rules for wellbore isolation, effective November 2, 2020 to further strengthen this mandate.

Geologic factors in Colorado also serve to help prevent groundwater impacts. Often, many thousands of feet of confining rock layers separate shallow groundwater formations that are used for drinking water, livestock, and irrigation from deep oil and gas formations. In cases where an operator intends to perform a hydraulic fracture treatment at a depth of less than 2,000 feet underground, a geological and engineering evaluation is required prior to approving a drilling permit. In cases where deep groundwater is present, COGCC rules require additional cement in oil and gas wells to seal the deep groundwater formations.

Q: What is hydraulic fracture fluid?

A: The COGCC and regulatory agencies of other oil and gas producing states partner with FracFocus, a Chemical Disclosure Registry, that operators use to report hydraulic fracture fluid chemical data (<https://www.fracfocus.org/>). According to FracFocus, approximately 98% to 99% of the fracturing fluid volume in most wells is water and sand. The remaining portion is made up of chemical additives used to reduce friction during pumping and prevent corrosion of the steel casing. Biocide is used to kill bacteria in the water. Surfactants promote water flowback from the formation, up the well and into the oil and gas production equipment at the well site or a nearby "tank battery." Fracturing chemicals are similar to other industrial chemicals which must be handled properly. COGCC rules require that operators properly store and handle chemicals in a manner that protects operator's employees, the public, the environment, and wildlife.

COGCC rules require operators to publicly disclose the components and concentrations of fracturing chemicals for each well within 60 days of the hydraulic fracture treatment on the FracFocus website, which is searchable by county, operator, and well. The website also provides information on chemicals used and their purpose.

Q: How are hydraulic fracturing fluids managed on the well site?

A: Operators manage large volumes of drilling fluid, hydraulic fracturing fluid, and flowback during drilling and hydraulic fracturing treatment. Operators protect the public, environmental resources, and wildlife by implementing best management practices specified by permit conditions and COGCC rules for spill prevention.

After hydraulic fracturing treatment, fluids return to production equipment at the well site as flowback. These flowback fluids are considered oil and gas Exploration and Production Waste (“E&P Waste”) that are recycled for other oil and gas operations, or are disposed of in accordance with state regulations. Marketable production fluids, including oil and gas, are separated and contained in tanks or vessels, or sent by pipeline to sales.

Q: What can neighbors expect to experience during hydraulic fracturing treatment?

A: The operator provides the COGCC and the local government a 48-hour notice before performing hydraulic fracturing treatment. As the operator mobilizes the hydraulic fracturing crews, water tanks are placed at the site. The operator transports water to the site for hydraulic fracturing fluid by pipeline or water trucks. Heavy equipment, such as sand haulers, pump trucks, blending units and a control van arrives and the equipment is connected to the well with high pressure piping. The operator pressure tests the equipment, then the hydraulic fracture treatment begins. The work can take several days to several weeks, depending on the number of wells on the well site and the number of treatment stages needed for each well. The equipment noise from engines, pumps, and vehicles will be noticeable during the work. Induced seismicity from hydraulic fracturing is very low intensity, too small to be noticed by people at the ground surface, and therefore man-made earthquakes are not a common occurrence in Colorado during hydraulic fracturing treatment operations.

Where can I get additional information?

FracFocus (www.fracfocus.org) contains detailed information on hydraulic fracturing, chemicals used, groundwater protection and how to find a well near you.

COGCC rules related to hydraulic fracturing:

- **Rule 308** Form 2, Application to Drill, Deepen, Re-Enter, or Recomplete, and Operate, Information Requirements
- **Rule 405.k** Notice of Intent to Conduct Hydraulic Fracturing Treatment
- **Rule 408** General Drilling Rules
- **Rule 411** Public Water System Protection
- **Rule 419** Bradenhead Monitoring, Testing, and Reporting
- **Rule 423 and 424** Noise and Lighting
- **Rule 437** Hydraulic Fracturing Chemical Additives
- **Rule 614** Coalbed Methane Wells
- **Rule 615** Groundwater Baseline Sampling and Monitoring
- **Rule 905** Management of E&P Waste
- **Rule 912** Spills and Releases (includes landowner notification requirements)

COGCC’s rules are available as downloadable files at cogcc.state.co.us.

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Exhibit F

Exhibit F

See COGCC information sheet attached hereto re: OGDG Status Information.



INFORMATION SHEET: OGDP STATUS INFORMATION

(As required by COGCC Rule 303.e.(2).G)

Why am I receiving this information sheet?

The Colorado Oil and Gas Conservation Commission (“COGCC”) prepared this information sheet to inform the public in the vicinity of a proposed Oil and Gas Development Plan (“OGDP”) how to access documents and view the status of proposed OGDPs through the COGCC’s website, eForms, and eFiling system. A review of public property records indicates that you may have an interest in lands that an oil and gas operator wishes to develop as part of an OGDP. Pursuant to Commission Rule 303.e.(2).G, operators are required to provide this information sheet to certain recipients near their development plans.

What is an Oil and Gas Development Plan?

An OGDP is an operator’s plan to develop subsurface oil and gas resources (“minerals”) from one or more surface locations. An OGDP consists of a hearing application and associated permit materials that provide technical information. The Director (i.e. COGCC Staff) reviews the technical information and makes a recommendation to the Commission for the hearings application; the Commission has the ultimate authority on approval or denial of the OGDP.

How do I view the status of the pending OGDP hearing application?

Members of the public may view the status of proposed OGDP applications through the COGCC eFiling System by creating an account in the Applications and Docket Portal, available on the “Hearings Page.”

1. Go to www.COGCC.state.co.us and click on the green “Commission Hearings” button:



2. On the right-hand side of the Hearings page, in the Operator Tools box header, click on “Application and Docket Portal”:



3. Create a user account by clicking “Request Access to Site,” and completing the required registration information. There may be a delay for processing following your request before

you are granted access. Check your email for access approval.

4. Once registration is complete, access the Application and Docket Portal by entering your user name and password.
5. At the bottom left of the page, find the panel labeled “Find Hearing Application by Docket Number” and enter the 9-digit docket number provided by the operator in their cover letter in the field named “Docket Number”:



6. The general status of the docket is listed in the first column on the left, titled “Docket Status.”
7. Double click the docket search result to load the docket’s main page, which will show additional information, including the application type, status, assigned Hearing Officer, and applicant information.

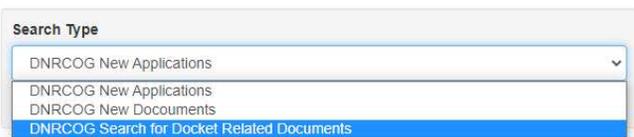
Do I have to create an account to view documents?

No. You may view documents through the “Document Search” described below without creating an eFiling System account, but you will not be able to view the “status” of the docket through this method.

1. On the right-hand side of the Hearings page, in the Public Tools box, click on the “Document Search” link:



2. From the “Search Type” dropdown menu, select “DNRCOG Search for Docket Related Documents”:



3. Input the docket number provided by the operator.

DNRCOG Docket Number

4. If you don't have a docket number, or to view any OGD, scroll down to the "DNRCOG Application Type" dropdown menu and select "OIL & GAS DEVELOPMENT PLAN":

DNRCOG Application Type

ADDITIONAL WELLS

COMPREHENSIVE AREA PLAN

ENFORCEMENT

EXCEPTION LOCATION

GENERAL ADMINISTRATIVE

OIL & GAS DEVELOPMENT PLAN

OTHER

5. Scroll down and click the "Search" button.
6. A table of all related documents will appear. Click on any item to view its contents or download to your computer.

How do I view general forms, permits, and data regarding permits and OGDs?

Use the Daily Activity Dashboard (DAD) to access frequently requested oil and gas data at the county and state levels. The DAD link is located in the right-hand corner of the COGCC homepage:



It allows you to generate statistical charts, graphs, tables, and maps for information including pending permits, well status, production, well inspections, Notices of Alleged Violation, active notifications, and spills. The COGCC also provides access to pending and approved permits through its "Permits Search" and interactive map on the COGCC website.

To view the status of pending Form 2As (Oil and Gas Location Assessment Permits) through the "Permit Search" function, follow the steps outlined below:

1. Click "Permits" in the green menu bar on the COGCC homepage. This will take you to the "Drilling and Location Permits Search" page.
2. Under Pending Permits, find "Oil & Gas Location Assessment Permits (Form 2A)". Select "All Counties" or a specific county using the drop down menu and click "Go!":

Pending Permits (Filed ON or AFTER January 15th, 2021)

Oil & Gas Location Assessment Permits (Form 2A): All Counties

3. A table will show all pending Form 2As currently under review by the COGCC.

Pending Location Permits - All Counties													
Doc Number (Public Comment Line)	Final day of Public Comment Period (Close at Midnight)	Received	Location Name (Documents Link)	Status	Status Date	Plotted SR Doc Number	Plotted SC Doc Number	Type of Permit	Op Or	Section	Township	Range	County
40200141	03/11/2021	01/06/2021	Dean_Test_4	IN PROCESS	01/06/2021			New Location	SENE	3	4S	6SW	DENVER
40200139	03/11/2021	01/06/2021	Sabrina_Test_Count_4	IN PROCESS	01/06/2021			New Location	SENE	3	4S	6SW	DENVER
40200206	03/11/2021	01/06/2021	Dean_Test_3	IN PROCESS	01/06/2021			New Location	SENE	3	4S	6SW	DENVER

- a. Clicking a "Doc Number" link will take you to the Public Comments portal for that pending permit.
- b. Clicking a "Location Name" link will take you to a list of documents related to that permit, including the Form 2A (as submitted by the operator) and supporting documents that are attached to the pending permit application.

Can I view pending applications on the COGCC Map?

Yes. You may access the COGCC GIS Online Interactive Map by clicking "Maps" in the green banner on the COGCC homepage, then click "Click HERE to access interactive map". You may use the "address search" option to zoom to your address to see oil and gas activity near you. With the map zoomed to your area of interest, you may specify pending permits by checking the appropriate boxes on the left-hand menu:



To select and view a pending application, use the arrow tool to double-click on the pending icons to display the Application.

Where can I get additional information?

- COGCC Homepage: <https://cogcc.state.co.us/#/home>
- Hearings Page: <https://cogcc.state.co.us/reg.html#/hearings>
- eFiling system help: http://cogcc/documents/reg/Hearings/External_E_filing_System_Users_Guidebook_20201109.pdf
- COGCC GIS Online Interactive Map help: <http://cogcc/documents/about/Help/Search%20pendin%20permits%20on%20the%20COGCC%20map.pdf>

WAYNE M. COPELAND

101 CR 342, Gatesville, Texas 76528
Mobile: (254)495-1653 wmcatty@msn.com

November 6, 2023

Mr. & Ms. Russell Hermanspan
25900 E. 133rd Circle
Commerce City, CO 80022

Dear Mr. & Ms. Hermanspan:

As discussed with Ms. Hermanspan over the phone the past few weeks, I have enclosed a Request For Informed Consent, a Letter Agreement with Exhibits A through F appendaged, a W-9 form and Order for Payment. Please sign the Order of Payment and provide the requisite information (Social Security, Telephone & Email) where indicated. The Request for Informed Consent (waiver), will require both of your signatures on Page 4. The W9 form only needs to be filled out and signed by one of you. I have attached one set of original documents and one set is your copy. After you have signed the documents, please insert the originals in the enclosed mailer. Also note that the mailer is pre-paid and addressed to Dakota Lewis. Mr. Lewis is the project manager and will hand deliver the forms to POCO's accounting department in their Denver office immediately upon receipt, which will expedite your payment.

In closing, I would like to take this opportunity to thank you for your cooperation and prompt attention to this matter. I will be speaking with you soon, but please do not hesitate to call me with any questions you may have.

Sincerely,



Wayne M. Copeland
Agent For Providence Energy, Inc.



November 6th, 2023

Mr. ft Ms. Russell Hermanspan
25900 E. 133rd Circle
Commerce City, Colorado 80022

Residence sited at 25900 E. 133rd Circle, Commerce City, CO

Wakeman OGD
Township 1South, Range 65 West, 6th P.M.
Sections 17 & 20: All
Surface Location: SWSE Section 20 (Location ID 461092)
Nearby Public Crossroads: 136th Ave. and Harvest Mill Road.

REQUEST FOR INFORMED CONSENT

Oil and gas operations are regulated in Colorado by the Colorado Oil and Gas Conservation Commission ("COGCC"). An oil and gas company, or "operator", may apply for permits from the COGCC to conduct oil and gas operations such as drilling wells to produce oil and natural gas. Effective January 15, 2021, operators must have an approved Oil and Gas Development Plan ("OGDP") to conduct new oil and gas operations. An approved OGD gives an operator permission to build one or more new oil and gas locations, or expand existing locations, which may include wellpads where oil and gas wells may be drilled.

COGCC's rules generally do not allow new oil and gas development within 2,000 feet of a residential or high-occupancy building such as a home or apartment building.¹ This is called a 2,000 foot siting requirement. However, there are some exceptions to this siting requirement. One exception is if the owners and tenants of every occupied building within 2,000 feet of the proposed development provide **informed consent** for the proposed oil and gas operations.

¹ The terms "building" and "home" in this letter include both the COGCC defined terms residential building units and high-occupancy building units. Because some high-occupancy building units are commercial buildings like nursing homes and hospitals, this letter uses the term "live" to refer to "owning," "living in," and "working in" a home or building.

You are receiving this letter because POCO Operating plans to submit an application to the COGCC for approval of an OGDG that proposes new oil and gas operations within 2,000 of the building where you live. There are two specific COGCC rules that address informed consent of building owners or tenants. The rule that applies in your case is:

COGCC Rule 604.b.(1), because the operator is proposing to build an oil and gas location (known as a "working pad surface") between 500 and 2,000 feet from the building that you live in.

POCO Operating is asking for your informed consent to this proposed OGDG. If you choose to provide consent, this letter will be included in the application materials and may be made public.

You are not required to consent to the development proposed near your home. If you do not consent, the operator may decide to pursue development at a different location, or may revise their proposal to meet additional COGCC conditions. The operator may also choose to undergo a more stringent application process before the COGCC. This may involve seeking a "variance" from the Commission's rules, or demonstrating that its plans for the operations will avoid, minimize, or mitigate impacts on nearby residents like you through a process governed by COGCC Rule 604.b.(4). So, if you do not consent, it is still possible that the operator will obtain the COGCC's permission to conduct the oil and gas operations.

Please note that the operator must also obtain permission from your local government to conduct the oil and gas operations if your local government has its own oil and gas permitting process. The relevant local government(s) for this OGDG application is City of Brighton. Under the rules of this local government, a local permit IS required.

MOU/Oil ft Gas Development Application, Brighton Lakes/BL Vintage OGDG, 19-00042,
In Process

To obtain your informed consent, an operator is required to provide you information about the nature, timeline, and scope of the oil and gas development that it proposes to conduct near your home, and the potential impacts that you may experience as a result of that development. This information must be presented in a language that you understand, and the operator must answer any questions that you have about the information. POCO Operating is providing this information to you so that you can make an informed decision about whether or not to give your consent to the proposed oil and gas development that would be located within 2,000 feet of your home. To

ensure that you fully understand the implications of providing your consent, at a minimum, **POCO** Operating is providing you with the following information:

1. Description of the physical siting of the proposed location, including legal description, and a map showing the proximity to your home;
2. How this proposed location was selected using an Alternative Location Analysis process;
3. A description of the mineral acreage to be developed from this proposed location, and the number and orientation of wells, types of equipment, and other on- and off-location infrastructure related to anticipated operations;
4. A description, proposed timeline, and expected duration of different operations that are planned, including construction, drilling, completions, flowback, interim reclamation, production, and final reclamation;
5. A description of the different immediate impacts that you may experience during each stage of operations, which may include noise, vibration, light, odor, dust, traffic, and visual impacts, along with the operator's planned mitigation ("Best Management Practices") designed to reduce the impacts you may experience during each state of the operation;
6. A description of potential adverse or beneficial impacts that you may experience as a result of planned operations at this location, including but not limited to scientific information discussing potential health impacts that are likely attributable to living in close proximity to oil and gas development;
7. A point of contact for you to obtain additional information from POCO Operating, and how you can access additional information from the COGCC and your local government.²

Because your home is within 2,000 feet of the proposed oil and gas development, you qualify as an "affected person" under COGCC's rules. That means you have a legal right to participate in all COGCC proceedings to decide whether or not to grant the operator its OGDG permit to conduct oil and gas operations near your home. You have the ability to submit written public comments to the COGCC's Staff while the application is pending. You have the right to request the COGCC to conduct a local public hearing at a location near where you live. You have the right to provide written and oral public comments to the Commissioners about the proposed development while the Commission is considering the application. You also have the right to petition to participate as an "affected person," which means you can exercise

² In addition to this information, the operator will also provide you with additional information required by COGCC at later stages of the application process, should the operator choose to move forward with the OGDG application process after learning whether you choose to provide your informed consent.

your rights in a process similar to litigation in court, before both a COGCC Hearing Officer and the Commissioners themselves.

Before you sign this document, you must read all the information provided to you by the operator. Please initial below to certify that:

- (1) you have read all the information provided to you: AV RH
(2) you understand that information: AV RH

Informed Consent Decision:

By signing this document, you are informing the COGCC that you have made a fully-informed decision on the oil and gas development proposed near the building that you own or live in. **YOU ARE NOT OBLIGATED TO SIGN THIS DOCUMENT. YOU HAVE THE RIGHT TO WITHHOLD YOUR CONSENT TO THE OIL AND GAS DEVELOPMENT NEAR YOUR HOME.** Your signature does not grant you additional rights or waive your existing rights, including your right to participate in COGCC's permitting proceedings as an "affected person." Your signature is only relevant to the proposed oil and gas development in this OGD. It is not transferable to any other proposal or location or permit application. This document will be maintained as part of the public record in the hearing of this OGD with the Commission.

I have read and I understand the information provided to me regarding the proposed Oil and Gas Location and its associated operations. The language was provided to me in a language that I understand. I have had the opportunity to ask POCO Operating questions. I understand the potential impacts of the development, including but not limited to potential impacts to my health. I also understand the benefits that I may receive as a result of the development.

I AGREE to the proposed location and associated oil and gas operations, and voluntarily provide my informed consent.

I DO NOT give my consent for the proposed location and associated oil and gas operations.

Signature: [Handwritten Signature]
Name (Printed): Russ Hermanspau

Signature: [Handwritten Signature]
Name (Printed): Katharine Hermanspau

Date: 11/30/2023

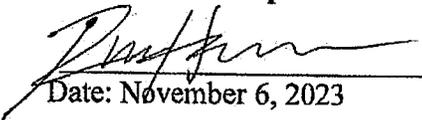
Language other than English that materials were provided in: _____

7. This Agreement shall be binding upon the Parties and their respective successors and assigns and shall inure to the benefit of the Parties and their respective successors and assigns. However, no assignment of any rights or obligations under this Agreement shall be made by Grantor without the prior written consent of Operator.

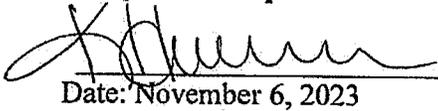
8. If at any time subsequent to the date of this Agreement any provision of this Agreement shall be held by any court of competent jurisdiction to be illegal, void or unenforceable, such provision shall be of no force and effect, but the illegality or unenforceability of such provision shall have no effect upon and shall not impair the enforceability of any other provision of this Agreement.

Grantors:

Russell Hermanspan

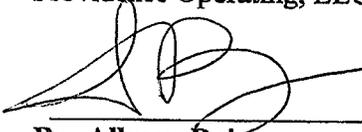

Date: November 6, 2023

Kaley Hermanspan


Date: November 6, 2023

OPERATOR:

Providence Operating, LLC


By: **Allyson Boise**
Title: Land & Business Development Consultant

PROVIDENCE OPERATING, L.L.C.

November 7, 2023

Land Owners

David Wentz and wife Gloria Wentz
13815 N. Powhaton Road
Brighton, CO 80603

Operator Name/Contact:

Providence Operating LLC DBA POCO Operating
Meghan A. Grimes
Senior Manager of ESG – Compliance and Regulation
720-256-8774
mgrimes@providence-energy.com

RE: Wakeman Oil and Gas Development Plan
Township 1 South, Range 65 West, 6th P.M.
Sections 17 & 20: All
Surface Location: SWSE Section 20 (Location ID 461092)
Nearby Public Crossroads: 136th Ave. and Harvest Mill Rd.

REQUEST FOR INFORMED CONSENT

Oil and gas operations are regulated in Colorado by the Colorado Oil and Gas Conservation Commission (“COGCC”). An oil and gas company, or “operator”, may apply for permits from the COGCC to conduct oil and gas operations such as drilling wells to produce oil and natural gas. Effective January 15, 2021, operators must have an approved Oil and Gas Development Plan (“OGDP”) to conduct new oil and gas operations. An approved OGDP gives an operator permission to build one or more new oil and gas locations, or expand existing locations, which may include wellpads where oil and gas wells may be drilled.

COGCC’s rules generally do not allow new oil and gas development within 2,000 feet of a residential or high-occupancy building such as a home or apartment building.¹ This is called a 2,000 foot siting requirement. However, there are some exceptions to this siting requirement. One exception is if the owners and tenants of every occupied building within 2,000 feet of the proposed development provide **informed consent** for the proposed oil and gas operations.

You are receiving this letter because Providence Operating LLC DBA POCO Operating (“POCO”) plans to submit an application to the COGCC for approval of an OGDP that proposes new oil and gas operations within 2,000 feet of the building where you live. There are two specific COGCC rules that address informed consent of building owners or tenants. The rule that applies in your case is:

¹ The terms “building” and “home” in this letter include both the COGCC defined terms Residential Building Units and High-Occupancy Building Units. Because some High-Occupancy Building Units are commercial buildings like nursing homes and hospitals, this letter uses the term “live” to refer to “owning,” “living in,” and “working in” a home or building.

COGCC Rule 604.b.(1), because the operator is proposing to build an oil and gas location (known as a “working pad surface”) between 500 and 2,000 feet from the building that you live in.

POCO is asking for your informed consent to this proposed OGDG. If you choose to provide consent, this letter will be included in the application materials and may be made public.

You are not required to consent to the development proposed near your home. If you do not consent, the operator may decide to pursue development at a different location, or may revise their proposal to meet additional COGCC conditions. The operator may also choose to undergo a more stringent application process before the COGCC. This may involve seeking a “variance” from the Commission’s rules, or demonstrating that its plans for the operations will avoid, minimize, or mitigate impacts on nearby residents like you through a process governed by COGCC Rule 604.b.(4). So, if you do not consent, it is still possible that the operator will obtain the COGCC’s permission to conduct the oil and gas operations.

Please note that the operator must also obtain permission from your local government to conduct the oil and gas operations if your local government has its own oil and gas permitting process. The relevant local government(s) for this OGDG application is Adams County, Colorado. Under the rules of this local government, a local permit is required. POCO previously received an approved Local Final Permit Decision from Adams County approving the siting and the related surface disturbance for the wellpad associated with the Wakeman OGDG, but the same has now expired. Concurrently with the filing of an application for approval of the Wakeman OGDG with the COGCC, POCO is seeking approval of an amended local permit through Adams County’s permit revision process.

To obtain your informed consent, an operator is required to provide you information about the nature, timeline, and scope of the oil and gas development that it proposes to conduct near your home, and the potential impacts that you may experience as a result of that development. This information must be presented in a language that you understand, and the operator must answer any questions that you have about the information. POCO is providing this information to you so that you can make an informed decision about whether or not to give your consent to the proposed oil and gas development that would be located within 2,000 feet of your home. To ensure that you fully understand the implications of providing your consent, at a minimum, POCO is providing you with the following information, attached hereto as Exhibit A:

1. Description of the physical siting of the proposed location, including legal description, and a map showing the proximity to your home;
2. How this proposed location was selected using an Alternative Location Analysis process;
3. A description of the mineral acreage to be developed from this proposed location, and the number and orientation of wells, types of equipment, and other on- and off-location infrastructure related to anticipated operations;
4. A description, proposed timeline, and expected duration of different operations that are planned, including construction, drilling, completions, flowback, interim reclamation, production, and final reclamation;
5. A description of the different immediate impacts that you may experience during each stage of operations, which may include noise, vibration, light, odor, dust, traffic, and visual

- impacts, along with the operator's planned mitigation ("Best Management Practices") designed to reduce the impacts you may experience during each state of the operation;
6. A description of potential adverse or beneficial impacts that you may experience as a result of planned operations at this location, including but not limited to scientific information discussing potential health impacts that are likely attributable to living in close proximity to oil and gas development; and
 7. A point of contact for you to obtain additional information from POCO, and how you can access additional information from the COGCC and your local government.²

Because your home is within 2,000 feet of the proposed oil and gas development, you qualify as an "affected person" under COGCC's rules.³ That means you have a legal right to participate in all COGCC proceedings to decide whether or not to grant the operator its OGDG permit to conduct oil and gas operations near your home. You have the ability to submit written public comments to the COGCC's Staff while the application is pending. You have the right to request the COGCC to conduct a local public hearing at a location near where you live. You have the right to provide written and oral public comments to the Commissioners about the proposed development while the Commission is considering the application. You also have the right to petition to participate as an "affected person," which means you can exercise your rights in a process similar to litigation in court, before both a COGCC Hearing Officer and the Commissioners themselves.

Before you sign this document, you must read all the information provided to you by the operator.

Please initial below to certify that:

(1) you have read all the information provided to you: DW gw

(2) you understand that information: DW gw

Informed Consent Decision:

By signing this document, you are informing the COGCC that you have made a fully-informed decision on the oil and gas development proposed for the Wakeman OGDG near the building that you own or live in. **YOU ARE NOT OBLIGATED TO SIGN THIS DOCUMENT. YOU HAVE THE RIGHT TO WITHHOLD YOUR CONSENT TO THE OIL AND GAS DEVELOPMENT NEAR YOUR HOME.** Your signature does not grant you additional rights or waive your existing rights, including your right to participate in COGCC's permitting proceedings as an "affected person." Your signature is only relevant to the proposed oil and gas development in this OGDG. It is not transferable to any other proposal or location or permit application. This document will be maintained as part of the public record in the hearing of this OGDG with the Commission.

I have read and I understand the information provided to me regarding the proposed Oil and Gas Location and its associated operations. The language was provided to me in a language that I understand. I have had the opportunity to ask POCO questions. I

DW gw

² In addition to this information, the operator will also provide you with additional information required by COGCC at later stages of the application process, should the operator choose to move forward with the OGDG application process after learning whether you choose to provide your informed consent.

³ Attached hereto as Exhibit B is information prepared by the COGCC explaining the potential impacts of living within 2,000 feet of oil and gas operations.

understand the potential impacts of the development under the proposed Wakeman OGDG, including but not limited to potential impacts to my health. I also understand the benefits that I may receive as a result of the development.

- I AGREE to the proposed location and associated oil and gas operations under the Wakeman OGDG, and voluntarily provide my informed consent.***
- I DO NOT give my consent for the proposed location and associated oil and gas operations under the Wakeman OGDG.***

Signature: David Wertz

Name (Printed): David Wertz

Date: 11-16-2023

Signature: Gloria E Wertz

Name (Printed): Gloria Wertz

Date: 11-16-2023

Language other than English that materials were provided in: N/A

Exhibit A

POCO hereby provides the following information pertaining to its proposed Wakeman OGDG:

1. Description of the physical siting of the proposed location, including legal description, and a map showing the proximity to your home.

The Wakeman well pad (COGCC Location ID 461092) ("Wakeman Pad") upon which POCO's proposed oil and gas operations under the Wakeman OGDG will occur is located in the SW1/4SE1/4 of Section 20, Township 1 South, Range 65 West, 6th, P.M., Wattenberg Field, Adams County, Colorado. The Wakeman Pad is a new oil and gas location which has not yet been constructed. A map depicting the location of the Wakeman Pad, and the proximity of the same to your home, is attached hereto as Exhibit A-1.

2. How this proposed location was selected using an Alternative Location Analysis process.

During the initial mineral development evaluation, POCO assessed three (3) alternative locations in addition to the location of the proposed Wakeman Pad in accordance with COGCC Rule 304.b.(2). Of the three (3) alternatives, all were located within a 2,000-foot radius of an existing RBU, such that none of the alternative locations were outside the 2,000-foot radius of an existing RBU. After assessing the location of the proposed Wakeman Pad, in addition to the three (3) alternatives, POCO determined that the proposed location of the Wakeman Pad would result in the least impacts and will provide public health, safety, welfare, environmental, and wildlife protections to the owners of the five (5) RBUs that are substantially equivalent to the Commission Rule 604.b.(1) 2,000-foot requirement.

3. A description of the mineral acreage to be developed from this proposed location, and the number and orientation of wells, types of equipment, and other on- and off-location infrastructure related to anticipated operations.

POCO's Wakeman OGDG proposes the drilling and operation of 16 new horizontal wells to produce oil and gas from the Niobrara, Codell, Fort Hays and Carlile Formations in Sections 17 and 20, Township 1 South, Range 65 West, 6th P.M., Adams County, Colorado ("Application Lands"). Sections 17 and 20 have been included within a drilling and spacing unit ("DSU"), containing approximately 1,280 acres, for the production of oil, gas and associated hydrocarbons from the Niobrara and Codell Formations, pursuant to Commission Order No. 407-2516 (Cause No. 407, Docket No. 171000663), entered August 22, 2018, as of July 30, 2018. This spacing order approved up to 16 horizontal wells within the DSU.

The Wakeman Pad is a new oil and gas location which has not yet been constructed. POCO previously received an approved Form 2A for the wells to be drilled from the Wakeman Pad, but the same was not constructed prior to the expiration of the subject Form 2A on January 24, 2022. Concurrently with the filing of its application for approval of the Wakeman OGDG with the COGCC, POCO is submitting a new a new Form 2A for the development of 16 new horizontal wells within the Application Lands from the proposed amended Wakeman Pad, pursuant to Rule 303.a.(2) and Rule 304, Document No. 403228818.

POCO has obtained approved permits to drill (collectively, the “APDs”) for 16 horizontal wells in the Application Lands as set forth below. All of these APDs were approved by the Director of COGCC on May 10, 2021 and remain in effect, expiring on May 9, 2024. None of these wells have been drilled yet. All of these wells, when drilled, will target the Niobrara and Codell Formations.

<u>Well Name</u>	<u>Document No.</u>	<u>API No.</u>
Wakeman 20-17-1CDH	402519300	05-001-10401-00
Wakeman 20-17-1NBH	402519533	05-001-10392-00
Wakeman 20-17-1NCH	402519594	05-001-10387-00
Wakeman 20-17-1NAH	402519493	05-001-10397-00
Wakeman 20-17-2CDH	402519601	05-001-10388-00
Wakeman 20-17-2NBH	402519722	05-001-10390-00
Wakeman 20-17-2NCH	402519746	05-001-10395-00
Wakeman 20-17-2NAH	402519652	05-001-10389-00
Wakeman 20-17-3CDH	402519829	05-001-10398-00
Wakeman 20-17-3NBH	402519856	05-001-10399-00
Wakeman 20-17-3NCH	402519882	05-001-10402-00
Wakeman 20-17-3NAH	402519852	05-001-10391-00
Wakeman 20-17-4CDH	402519889	05-001-10396-00

Wakeman 20-17-4NBH	402520089	05-001-10394-00
Wakeman 20-17-4NCH	402520359	05-001-10393-00
Wakeman 20-17-4NAH	402520057	05-001-10400-00

All wells will be drilled and completed in a single drilling round. The laterals for these wells will be about two (2) miles in length and will be drilled from south to north.

Wakeman Pad construction is generally comprised of mobilizing/demobilizing various combinations of backhoes, dozers and/or graders to create a relatively flat surface that can accommodate equipment to drill, complete and produce wells. Just prior to grading, implements/designs to handle stormwater are installed on and around the Wakeman Pad. Once stormwater measures are in place and the grade is set, the location is plated with road base to both stabilize and prevent erosion/dust. This phase of construction takes place prior to drilling start.

The production facility construction is generally comprised of setting and connecting all equipment that will be process production from the wells. This phase of construction typically takes place in parallel with the drilling and completions phase of development. Subject to COGCC approval of the Wakeman OGDG application, the Wakeman Pad will be constructed to cover approximately 9.367 acres of new surface disturbance, with an estimated 7.807 acres being associated with the well pad and an estimated 1.56 acres being associated with upgrades to an existing 2-track road and construction of a new access road. Cumulative acres of disturbance concerning the Wakeman Pad during drilling and completion operations associated with the 16 new horizontal wells permitted in the APDs set forth and requested in the Wakeman OGDG application will be 9.367 acres. Once drilling and completion operations associated with the 16 new horizontal wells requested in the Wakeman OGDG application are finished, the Wakeman Pad will be interim reclaimed to a total of approximately 5.797 acres

The Wakeman Pad will include a new access road. In addition, the production facility will be comprised of minimal tanks and associated equipment. All products will be sold directly into a pipeline, which alleviates truck traffic as well as additional long-term equipment needed on the Wakeman Pad. A drilling rig will be in place during the drilling phase. This project will use both water based and oil based mud for drilling operations. Water production is minimal in this area and will be hauled off by a truck as needed.

4. A description, proposed timeline, and expected duration of different operations that are planned, including construction, drilling, completions, flowback, interim reclamation, production, and final reclamation.

Operations will be conducted in the following stages which are estimated to take the following amounts of time.

Stages	Time
Wakeman Pad Construction	26 Days
Facilities Construction	70 Days
Drilling	132 Days
Completions (Fracturing)	114 Days
Drillout	26 Days
Flowback/Production	365+ Days

Stages may not occur simultaneously at the Wakeman Pad. Construction of the Wakeman Pad is anticipated to begin in the third quarter of 2023.

- A. Construction Phase estimated to begin Q3 2023
- B. Drilling Phase estimated to begin Q4 2023
- C. Completions Phase estimated to begin Q4 2023
- D. Production Phase estimated to begin Q1 2024
- E. Interim Reclamation estimated to begin Q1 2024
- F. Final Reclamation estimated to begin Q1 2044

5. A description of the different immediate impacts that you may experience during each stage of operations, which may include noise, vibration, light, odor, dust, traffic, and visual impacts, along with the operator's planned mitigation ("Best Management Practices") designed to reduce the impacts you may experience during each state of the operation.

You may experience certain impacts during each stage of the proposed operations on the Wakeman Pad. Those potential impacts are largely mitigated by the use of sound walls, downward directed lighting designed to stay within the sound walls, and use of water or products intended to minimize dust.

6. A description of potential adverse or beneficial impacts that you may experience as a result of planned operations at this location, including but not limited to scientific information discussing potential health impacts that are likely attributable to living in close proximity to oil and gas development.

Attached hereto as Exhibit B is information prepared by the COGCC explaining the potential impacts of living within 2,000 feet of oil and gas operations.

7. A point of contact for you to obtain additional information from POCO, and how you can access additional information from the COGCC and your local government.

Meghan Grimes, who's email address and phone number are stated on the first page of this letter, is a point of contact at POCO whom you may reach out to for additional information or with questions.

The COGCC has prepared information about living within 2,000 feet of oil and gas operations and the same has been attached to this letter as Exhibit B. Additional information and resources are available on the COGCC website (cohcc.state.co.us). The phone number for the COGCC is 303-894-2100.

The Relevant Local Government pertaining for the Wakeman OGD is Adams County, Colorado. You may obtain additional information from the Relevant Local Government at their website: www.adcogov.org. Gregory Dean is the contact person for Adams County; his phone number is 720.523.6891 and his email address is gdean@adcogov.org.

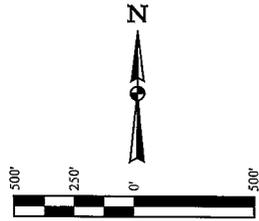
Additionally, the following information sheets prepared by the COGCC are also attached for your information and use:

- Procedural Steps for the Review of OGDs (as required by COGCC Rule 303.e(2).C) (see Exhibit C);
- Public Comments (as required by COGCC Rule 303.e.(2).D) (see Exhibit D);
- Hydraulic Fracturing Treatment (as required by COGCC Rule 303.e.(2).E) (see Exhibit E);
- and
- OGD Status Information (as required by COGCC Rule 303.e.(2).G) (see Exhibit F).

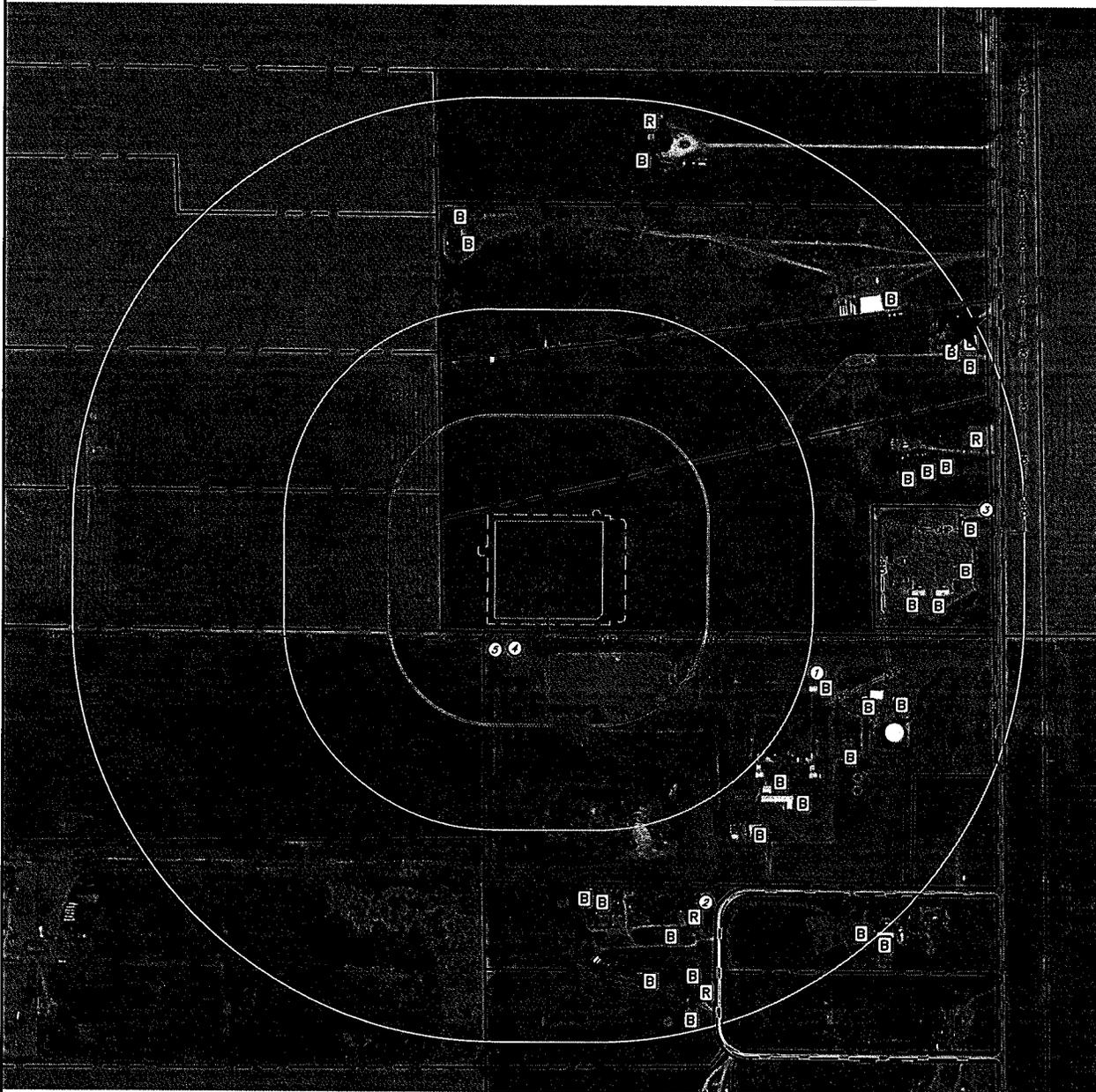
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12/29/2022
Exhibit A-1

Exhibit A-1

See map attached hereto, showing the proximity to your home to the Wakeman Pad, being the location of POCO's proposed Wakeman OGDG.



#	CULTURAL FEATURE	FROM EDGE OF WORKING PAD SURFACE
1	BUILDING	SE 1031'±
2	RESIDENTIAL BUILDING UNIT	SE 1428'±
*	HIGH OCCU. BUILDING UNIT	NW 5280'+
*	DESIGNATED OUTDOOR ACTIVITY AREA	NW 5280'+
3	PUBLIC ROAD (POWHATON ROAD)	EAST 1861'±
4	ABOVE GROUND UTILITY	SOUTH 95'±
*	RAILROAD	NW 5280'+
5	PROPERTY LINE	SOUTH 63'±
*	SCHOOL FACILITY	NW 5280'+
*	CHILD CARE FACILITY	NW 5280'+
*	DISPROPORTIONATELY IMPACTED COMMUNITY	SOUTH 5280'+
*	RESIDENTIAL BUILDING UNIT, HOBU, OR SCHOOL FACILITY WITHIN A DI COMMUNITY WITHIN 2000' OF THE WORKING PAD SURFACE	SOUTH 5280'+



LEGEND

- = OIL & GAS LOCATION
- = WORKING PAD SURFACE
- = PROPOSED ACCESS ROAD
- = 500' OFFSET FROM WORKING PAD SURFACE
- = 1000' OFFSET FROM WORKING PAD SURFACE
- = 2000' OFFSET FROM WORKING PAD SURFACE
- = PROPERTY LINE
- = POWER LINE
- = ROAD
- [B] = BUILDING
- [R] = RESIDENTIAL BUILDING UNIT
- [S] = Your house

CULTURAL FEATURE	NUMBER OF FEATURE INSIDE 0'-500' OFFSET	NUMBER OF FEATURE INSIDE 501'-1000' OFFSET	NUMBER OF FEATURE INSIDE 1001'-2000' OFFSET
BUILDING UNITS (COMMERCIAL)	0	0	0
RESIDENTIAL BUILDING UNITS	0	0	5
HIGH OCCUPANCY BUILDING UNITS	0	0	0
SCHOOL PROPERTIES	0	0	0
SCHOOL FACILITIES	0	0	0
DESIGNATED OUTDOOR ACTIVITY AREAS	0	0	0

NOTES:

- * Bearings & distances shown are from the nearest edge of working pad surface.
- * Cultural feature is outside of view port.

POCO OPERATING

WAKEMAN 20-17 PAD
SW 1/4 SE 1/4, SECTION 20, T1S, R65W, 6th P.M.
ADAMS COUNTY, COLORADO

UINTAH
ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	ORION RICE	06-16-22	SCALE
DRAWN BY	M.D.	06-21-22	1" = 500'

CULTURAL FEATURES MAP

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Exhibit B

Exhibit B

See COGCC information sheet attached hereto re: living within 2,000 feet of oil and gas operations.



COGCC FACT SHEET: OIL AND GAS WITHIN 2,000 FEET

This fact sheet is being provided because an operator has submitted, or is planning to submit, drilling permits to the COGCC for an oil & gas location within 2,000 feet of your residence. COGCC wishes to inform individuals that live near planned oil and gas operations that the Colorado Department of Public Health and the Environment (CDPHE) recently published a study that addresses potential health risks from oil and gas development.

On October 17, 2019, a study titled "[Final Report: Human Health Risk Assessment for Oil & Gas Operations in Colorado](#)" was released by CDPHE. The health risk modeling study used actual emission data that was collected in previous studies of oil and gas operations to mathematically estimate (model) hypothetical chemical concentrations at distances between 300 and 2,000 feet in different meteorological conditions and other controlling factors to estimate potential for exposures.

The individual chemical concentrations modeled from hypothetical well pads in the study were below health based guidelines for chronic (long-term) health impacts and were within acceptable risk ranges for cancer, as established by the United States Environmental Protection Agency. The study did not determine any elevated risk of chronic health impacts from any single substance at 500 feet or greater although the study showed slightly elevated risk of blood and nervous system effects from multiple chemicals at 500 feet but not at 2,000 feet. Further, the study did find that there may be potential risks of acute (short term) impacts at all modeled distances, particularly during the drilling, hydraulic fracturing and flowback phases of oil and gas development. The acute risks are primarily associated with benzene, which under worst-case conditions may be temporarily at high enough concentrations to cause short-lived symptoms such as headaches, dizziness, and respiratory, skin, and eye irritation. The modeled concentrations that were high enough to cause these symptoms are from the modeling parameters that represent potential worst-case conditions (i.e. certain meteorological conditions, peak emissions, continuous exposures, etc.).

The study is not based on actual reports of symptoms, nor is it based on actual measurements up to 2,000 feet, rather, it only reports that there are potential impacts under worst-case conditions. It should also be noted that the study relied on data collected in 2013 to 2016, and since then, there have been upgrades in operational practices and controls, including improved emission controls which are now in common use; additionally, both the COGCC and the CDPHE Air Pollution Control Division have enacted more stringent regulations that apply to current oil and gas operations.

Please contact the COGCC or visit the [COGCC website](#) for additional information regarding permits for planned oil and gas operations. All permits have a 20-day comment period that is available to all members of the public. All permit information can be viewed on the website, including the best management practices (BMPs) and conditions of approval (COAs) that are applied for the protection of public health, safety and welfare or the environment.

The COGCC and CDPHE will be conducting further studies to better understand potential health impacts from oil and gas operations. Please visit the [COGCC website](#) and the [CDPHE website](#) for additional information regarding these studies and any updates.

20191120

URLs for embedded links:

1. https://drive.google.com/open?id=1pO41DJMXw9sD1NjR_OKyBJP5NCb-AO0l
2. <http://cogcc.state.co.us/>
3. <https://www.colorado.gov/pacific/cdphe/oqhealth>

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Exhibit C

Exhibit C

See COGCC information sheet attached hereto re: Procedural Steps for the Review of OGDGs.



INFORMATION SHEET: PROCEDURAL STEPS FOR THE REVIEW OF OGDPs

(As required by COGCC Rule 303.e.(2).C)

Why am I receiving this information sheet?

Oil and gas operating companies (“Operators”) are required to obtain approval of an Oil and Gas Development Plan (“OGDP”) from the Colorado Oil and Gas Conservation Commission (“COGCC”) prior to undertaking any new operations such as drilling oil and gas wells or building oil and gas locations. When an Operator submits an OGDP application to the COGCC for consideration, and the application has been received and is deemed complete, COGCC staff begins a formal technical review of the application materials, and a public comment period starts.

COGCC has prepared this information sheet to inform the public of the procedural steps involved with the Director’s and Commission’s review of an OGDP, so that the public is informed and may participate in the review process if they choose. As part of the process, Operators must provide this information sheet to certain recipients, like yourself, that include mineral owners within the area of proposed development and all landowners, homeowners, commercial property owners, tenants, and other entities within 2,000 feet of an oil and gas location proposed by a pending OGDP application.

What is an Oil and Gas Development Plan (OGDP)?

An OGDP is an Operator’s plan to develop oil or gas resources (“minerals”) from one or more surface locations. Operators prepare an OGDP and associated application materials, consistent with the requirements of COGCC Rule 303, and submit the plan for approval through the Commission’s Hearings process. The application materials include a hearing application; one or more Form 2A, Oil and Gas Location Assessments; a Form 2B, Cumulative Impacts Data Identification; and a Form 2C, OGDP Certification. The application may also include a request for the establishment

of one or more Drilling and Spacing Units (“DSUs”). The OGDP, along with its associated supporting documents, will be heard at a public hearing where the Commission will make a final determination to approve or deny the OGDP application.

What are the procedural steps involved with the Director’s and Commission’s review of Oil and Gas Development Plans?

1. **OGDP application is submitted:** Operator/Applicant submits a complete OGDP application with all supporting documents. The written portion of the application is submitted to the COGCC hearings unit via the eFilings system, and Forms 2A, 2B, and 2C are submitted to technical staff via the eForms system. (See Rules 303 & 304)
2. **OGDP application is received:** The COGCC hearings unit reviews the written hearing application, assigns a docket number for the OGDP, and provides public notice for the hearing. (See Rules 303 & 504)
3. **Completeness determination:** The COGCC technical staff and Director review the application materials for completeness. When deemed complete:
 - a. the OGDP application materials are posted on COGCC’s website;
 - b. the Operator provides notice (including this information sheet) to relevant persons;
 - c. the public comment period begins;
 - d. the formal consultation period commences as applicable (including relevant/proximate local governments and other agencies such as Colorado Parks and Wildlife (“CPW”) or Colorado Department of Public Health and Environment (“CDPHE”)); and
 - e. COGCC staff begin their technical review of the OGDP components. (See Rule 303).

-
4. **Director's review of application (technical review):** COGCC technical staff conducts the technical review of all application materials to ensure compliance with COGCC Rules, ensure the protection of public health, safety, welfare, the environment, and wildlife resources, and to evaluate potential Cumulative Impacts. The technical review includes analysis and assessment of:
- DSUs and protection of mineral owner's correlative rights;
 - proposed surface locations and alternative locations;
 - downhole and engineering considerations;
 - best management practices;
 - public comments and recommendations provided by consulting agencies;
 - financial assurance; and
 - the need for conditions of approval. (See Rule 306)
5. **Commission's consideration and final action (public hearing):** The Commission receives the Director's recommendation of the OGDG and begins review of the OGDG with support from the COGCC hearings unit. The review includes all supporting documents, written testimony, public comments, consulting agency recommendations, and Director's recommendation. The Commission considers the OGDG at a public hearing, which may include oral testimony provided during the hearing. The Commission makes a final determination and presents its findings in a written order based on the evidence in the record; the Commission's order to approve or deny the OGDG application is final. (See Rule 307)

Where can I get additional information?

For more information about the COGCC administrative hearing process and OGDGs, please refer to the COGCC website at <http://cogcc.state.co.us>. You may also contact the COGCC at dnr.ogcc@state.co.us or 303-894-2100. Please note, COGCC staff are not available to provide legal advice. COGCC recommends that you engage an attorney with knowledge of oil and gas matters to assist you with reviewing any offers you receive from an oil and gas operator or other person.

Director's recommendation: Once the Director has reviewed the application materials, the Director provides a written recommendation to the Commission in support of the approval or denial of the OGDG application. The Director will post the recommendation on COGCC's website, notify relevant parties¹, and submit it to the COGCC hearings unit in preparation for hearing. (See Rule 306.c)

¹ Parties who receive this information sheet will not necessarily be included in the notice of the Director's recommendation. Parties who make a public comment on the Form 2A and include their email address will receive the notice of the Director's recommendation.

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Exhibit D

Exhibit D

See COGCC information sheet attached hereto re: Public Comments.



INFORMATION SHEET:
PUBLIC COMMENTS
 (As required by COGCC Rule 303.e.(2).D)

Purpose

This information sheet provides details on how to make public comments on an Oil and Gas Development Plan submitted to the Colorado Oil and Gas Conservation Commission via the Form 2A, Oil and Gas Location Assessment permit application.

Why am I receiving this Information Sheet?

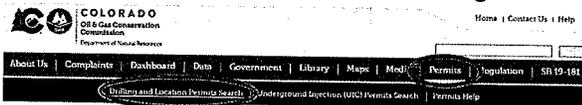
You have received this Colorado Oil and Gas Conservation Commission (“COGCC”) information sheet because an oil and gas operator (“the Operator”) has submitted an application for an Oil and Gas Development Plan (“OGDP”), and that application is under review by the COGCC. Per COGCC Rule 303.e.(1), the Operator is required to provide this information to you within seven days of the application materials being posted on the COGCC website.

COGCC Rule 303.d requires the COGCC to open a formal “public comment period” upon posting the OGDP application to our website. This public comment period allows the public to review OGDP applications and their components (i.e., proposed Oil and Gas Locations), and provide comments on those pending permit applications.

How can I provide comments on pending permits in an OGDP?

Members of the public can access OGDP applications through the COGCC website to review permit information and provide comments. Public comments may be made directly on Form 2A, Oil and Gas Location Assessment permit applications (“Form 2A”) through the COGCC website.

1. Go to the COGCC website <https://cogcc.state.co.us>
2. On the green menu bar, click on the “Permits” page. This will take you to the “Drilling and Location Permits Search” tool for Pending Permits.



3. Under “Pending Permits”, find “Oil and Gas Location Assessment Permits (Form 2A)”. Select the county of interest from the dropdown menu and click “Go!”

Pending Permits (Filed ON or AFTER January 15th, 2021)

Oil & Gas Location Assessment Permits (Form 2A):

4. This will generate a table of pending applications and will indicate the status of the public comment period for each permit within the COGCC review process.
5. Scroll through the list of pending permits to find the one you would like to review. You may wish to use “ctrl + f” to search for a specific document number, operator name, or location name.
6. To view the submitted Form 2A and its associated attached documents, click the “Location Name” link for the permit application you wish to view.

Pending Location Permits - All Counties

Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian Test 4	IN PROCESS	01/26/2021

7. To make a public comment on a specific permit application, click the “Doc Number” link of the permit on which you wish to comment. This will take you to the Public Comment portal.

Pending Location Permits - All Counties

Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian Test 4	IN PROCESS	01/26/2021

8. In the Public Comment portal, you may review the Form 2A application including the PDF and all attachments.

Selected Well / Location:

Document Number	Form Type	COL
402165141	O2A	COL

9. To make a public comment, click the “Make Comment” button. A Form will open for you to provide your name, contact information, and your comment. Only the text in the Comment box will be made public; your contact information will be kept confidential by COGCC.

Please fill out the fields below in full to submit your comment.

Name: Email:

Address: Phone Number:

City: State: Zip:

Subject:

Comment:

- 10. Click the "Submit Comment" button when you are ready to submit your comment.
- 11. You may also view other public comments and read yours after it is posted by scrolling down on this page (see below about a delay in displaying comments).

How long do I have to submit a comment on a permit?

The Public Comment Period begins once the COGCC Director determines the OGDG application is complete and has been successfully submitted by the operator. The Director will approve the Form 2C, OGDG Certification form, and post the OGDG application on the website for public review.

In order to be considered by the Director and Commission during the review of the OGDG, public comments must be received as follows:

- 1. Within 30 days from the date that the Director posts the OGDG on the website, OR
- 2. Within 45 days if the OGDG includes any proposed Oil and Gas Locations within 2,000 feet of a Residential Building Unit, High Occupancy Building Unit, or School Facility within a Disproportionately Impacted Community.

The final day for public comments can be found in the list of all pending permits:

Pending Location Permits - All Counties

Back Export to Excel

Doc Number (Public Comment Link)	Final day of Public Comment Period (Closes at Midnight)	Received	Location Name (Documents Link)	Status	Status Date
402165141	03/11/2021	01/26/2021	Brian_Test_4	IN PROCESS	01/26/2021

When the Public Comment Period closes, the date will revert to read "Comments Closed". The link to the public comment portal will remain active, but comments will no longer be accepted. You will still be able to view any public comments submitted for pending permits.

The Director may extend or reopen the public comment period per Rule 303.g, for up to an additional 30 days for a proposed OGDG if the Director determines an extension or reopening is reasonable in order to obtain public input.

What happens to my comment?

Your comment will become part of the public record of the application and will be reviewed by the applicant,

COGCC staff, Director, and the Commission. COGCC staff may recommend permit conditions in response to comments. But, Staff does not routinely respond individually to comments; instead, COGCC staff will work directly with the applicant to address the site-specific concerns expressed.

Submitted comments may not be immediately visible; it may be a few days before you see your comments posted. This delay allows COGCC supervisory staff to screen for offensive language prior to publication.

What if I want to make my comment to the Commission?

COGCC Staff and the Director review every comment received on a Form 2A permit application. They review the site specific concerns against the totality of the application materials, including the alternative location analysis, cumulative impacts evaluation, and best management practices proposed by the applicant. When the Director makes a recommendation to the Commission to either approve or deny an OGDG, that recommendation will include the consideration of the public comments received.

In their review of an OGDG for a final determination at the administrative hearing, the Commission will have access to the entire record, including your public comment.

Can I remain anonymous?

Yes. Only the "Comment" portion of your submitted comment will be made publicly viewable. Your name and contact information will be kept confidential, and will only be used by COGCC staff to contact you if necessary in the course of permit application review. If you choose to include your name and contact information in the body of your comment text, it will be part of the public record.

Where can I get additional information?

The following links provide guidance and additional information on providing Public Comments.

COGCC Permits Page:

<https://cogcc.state.co.us/permits.html#/permits>

Numerous helpful guidance documents can be found at the link on the COGCC Permits Page:

<https://cogcc.state.co.us/permits2.html#/permitshelp>

Daily Activity Dashboard (DAD) is another useful tool and can be used to access the public comment portal as well: <https://cogcc.state.co.us/dashboard.html>

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Exhibit E

Exhibit E

See COGCC information sheet attached hereto re: Hydraulic Fracturing Treatment.



INFORMATION SHEET: HYDRAULIC FRACTURING TREATMENT

(As required by COGCC Rule 303.e.(2).E)

Why am I receiving this information sheet?

The Colorado Oil and Gas Conservation Commission (“COGCC”) prepared this information sheet to provide the public with information related to hydraulic fracturing. Pursuant to Commission Rule 303.e.(2).E, Operators¹ are required to provide this information sheet to mineral owners within the area of proposed development and all landowners, homeowners, commercial property owners, tenants, and other entities within 2,000 feet of a proposed oil and gas location.

What is hydraulic fracturing treatment, and why is it necessary?

Hydraulic fracturing treatment is the process of creating small cracks, or “fractures,” in the rocks of deep, underground geological formations that have oil and natural gas. The fractures enhance the flow of oil and gas from the formation to the oil and gas well where it flows or is pumped up the well to the production equipment located on the surface of the site.

The process of hydraulic fracturing has been used for decades in Colorado, dating back to the 1970s. Operators² continue to improve hydraulic fracturing, and it is now a standard practice used in almost all oil and gas wells in the state, and across much of the country. Hydraulic fracturing has made it possible to produce oil and gas from rock formations that did not often produce oil and gas in the early to middle part of the twentieth century.

What happens before hydraulic fracturing treatment?

The operator uses a drilling rig to drill a “surface hole” and set a steel pipe called “surface casing” in the hole. The surface casing may extend many hundreds of feet, sometimes more than 1,000

feet, underground. The operator places cement on the outside of the surface casing to seal and protect groundwater. The operator tests the surface casing with pressure, then a smaller “production hole” is drilled out the bottom of the surface casing. After completing a formation integrity test, the operator drills down to the geological formation containing oil and gas, usually many thousands of feet underground. The operator lowers a production casing into the production hole, and cement is used to make a seal above the deep oil and gas formation. The operator “completes” the well by placing holes, or “perforations” in the casing at the deep oil and gas formation, to allow oil and gas to flow into the well. The well is then ready for hydraulic fracturing treatment.

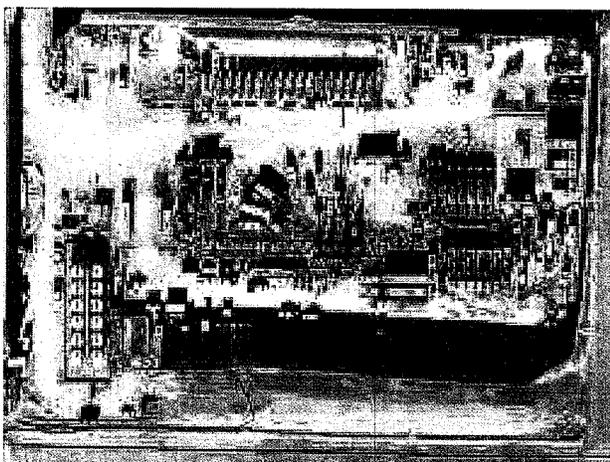
What happens during and after hydraulic fracturing treatment?

The operator performs the treatment by using high pressure water pumps to fracture the deep oil and gas rock formation. The pumps push fracturing fluids down the well and out through the perforations, into the oil and gas rock formation. The hydraulic fracturing fluids are mostly water and sand, with a small amount of chemical additives. The sand, also called “proppant,” remains in the fractures to help keep the fractures open allowing oil and gas to flow through the fractures to the perforations.

After hydraulic fracture treatment, the well is allowed to “flowback,” meaning hydraulic fracture fluids, oil, gas, and produced water from the formation flow through the perforations and up the well to the surface where the fluids are separated. The operator sells the oil and gas. Waste products, mostly water produced from the oil and gas formation and hydraulic fracture fluids, are captured and stored for proper treatment or disposal.

¹ “Operator” as defined in COGCC Rules

² Hereinafter, and only for the purpose of describing the hydraulic fracture treatment process, the term “operator” includes the operator itself and all contractors and service providers that the operator hires to perform work.



Overhead view of a multiple-well site with hydraulic fracturing equipment set up inside a sound wall

Common questions and answers about hydraulic fracturing treatment.

Q: How is an oil and gas well designed to be protective of public health, the environment, and wildlife resources?

A: COGCC engineering staff review all well permits to ensure that wells are lined with multiple layers of steel and cement sufficient to isolate groundwater from the deep oil and gas rock formations. The operator's wellbore design must meet COGCC wellbore isolation standards and rules in order to receive a permit to drill.

Surface casing extends from the ground surface to 50 feet or more below groundwater. Production casing is cemented to seal the oil and gas formation in the well and prevent flow between groundwater and the oil and gas formations. The operator performs a well survey, called a "cement bond log," to verify the cement placement around the production casing. Additionally, the operator pressure tests surface equipment and ensures that nearby, "offset" wells that are close enough for pressure communication in the oil and gas formation have properly-rated surface equipment or downhole plugs.

Q: Will hydraulic fracturing treatment cause problems with water wells

A: Water well problems related to hydraulic fracturing in Colorado are rare, which is largely a result of COGCC's long-standing mission to protect Waters of the State of Colorado, including

groundwater. Most recently, the COGCC adopted new rules for wellbore isolation, effective November 2, 2020 to further strengthen this mandate.

Geologic factors in Colorado also serve to help prevent groundwater impacts. Often, many thousands of feet of confining rock layers separate shallow groundwater formations that are used for drinking water, livestock, and irrigation from deep oil and gas formations. In cases where an operator intends to perform a hydraulic fracture treatment at a depth of less than 2,000 feet underground, a geological and engineering evaluation is required prior to approving a drilling permit. In cases where deep groundwater is present, COGCC rules require additional cement in oil and gas wells to seal the deep groundwater formations.

Q: What is hydraulic fracture fluid?

A: The COGCC and regulatory agencies of other oil and gas producing states partner with FracFocus, a Chemical Disclosure Registry, that operators use to report hydraulic fracture fluid chemical data (<https://www.fracfocus.org/>). According to FracFocus, approximately 98% to 99% of the fracturing fluid volume in most wells is water and sand. The remaining portion is made up of chemical additives used to reduce friction during pumping and prevent corrosion of the steel casing. Biocide is used to kill bacteria in the water. Surfactants promote water flowback from the formation, up the well and into the oil and gas production equipment at the well site or a nearby "tank battery." Fracturing chemicals are similar to other industrial chemicals which must be handled properly. COGCC rules require that operators properly store and handle chemicals in a manner that protects operator's employees, the public, the environment, and wildlife.

COGCC rules require operators to publicly disclose the components and concentrations of fracturing chemicals for each well within 60 days of the hydraulic fracture treatment on the FracFocus website, which is searchable by county, operator, and well. The website also provides information on chemicals used and their purpose.

Q: How are hydraulic fracturing fluids managed on the well site?

A: Operators manage large volumes of drilling fluid, hydraulic fracturing fluid, and flowback during drilling and hydraulic fracturing treatment. Operators protect the public, environmental resources, and wildlife by implementing best management practices specified by permit conditions and COGCC rules for spill prevention.

After hydraulic fracturing treatment, fluids return to production equipment at the well site as flowback. These flowback fluids are considered oil and gas Exploration and Production Waste (“E&P Waste”) that are recycled for other oil and gas operations, or are disposed of in accordance with state regulations. Marketable production fluids, including oil and gas, are separated and contained in tanks or vessels, or sent by pipeline to sales.

Q: What can neighbors expect to experience during hydraulic fracturing treatment?

A: The operator provides the COGCC and the local government a 48-hour notice before performing hydraulic fracturing treatment. As the operator mobilizes the hydraulic fracturing crews, water tanks are placed at the site. The operator transports water to the site for hydraulic fracturing fluid by pipeline or water trucks. Heavy equipment, such as sand haulers, pump trucks, blending units and a control van arrives and the equipment is connected to the well with high pressure piping. The operator pressure tests the equipment, then the hydraulic fracture treatment begins. The work can take several days to several weeks, depending on the number of wells on the well site and the number of treatment stages needed for each well. The equipment noise from engines, pumps, and vehicles will be noticeable during the work. Induced seismicity from hydraulic fracturing is very low intensity, too small to be noticed by people at the ground surface, and therefore man-made earthquakes are not a common occurrence in Colorado during hydraulic fracturing treatment operations.

Where can I get additional information?

FracFocus (www.fracfocus.org) contains detailed information on hydraulic fracturing, chemicals used, groundwater protection and how to find a well near you.

COGCC rules related to hydraulic fracturing:

- **Rule 308** Form 2, Application to Drill, Deepen, Re-Enter, or Recomplete, and Operate, Information Requirements
- **Rule 405.k** Notice of Intent to Conduct Hydraulic Fracturing Treatment
- **Rule 408** General Drilling Rules
- **Rule 411** Public Water System Protection
- **Rule 419** Bradenhead Monitoring, Testing, and Reporting
- **Rule 423 and 424** Noise and Lighting
- **Rule 437** Hydraulic Fracturing Chemical Additives
- **Rule 614** Coalbed Methane Wells
- **Rule 615** Groundwater Baseline Sampling and Monitoring
- **Rule 905** Management of E&P Waste
- **Rule 912** Spills and Releases (includes landowner notification requirements)

COGCC’s rules are available as downloadable files at cogcc.state.co.us.

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Exhibit F

See COGCC information sheet attached hereto re: OGDG Status Information.



INFORMATION SHEET: OGDG STATUS INFORMATION

(As required by COGCC Rule 303.e.(2).G)

Why am I receiving this information sheet?

The Colorado Oil and Gas Conservation Commission (“COGCC”) prepared this information sheet to inform the public in the vicinity of a proposed Oil and Gas Development Plan (“OGDP”) how to access documents and view the status of proposed OGDGs through the COGCC’s website, eForms, and eFiling system. A review of public property records indicates that you may have an interest in lands that an oil and gas operator wishes to develop as part of an OGDG. Pursuant to Commission Rule 303.e.(2).G, operators are required to provide this information sheet to certain recipients near their development plans.

What is an Oil and Gas Development Plan?

An OGDG is an operator’s plan to develop subsurface oil and gas resources (“minerals”) from one or more surface locations. An OGDG consists of a hearing application and associated permit materials that provide technical information. The Director (i.e. COGCC Staff) reviews the technical information and makes a recommendation to the Commission for the hearings application; the Commission has the ultimate authority on approval or denial of the OGDG.

How do I view the status of the pending OGDG hearing application?

Members of the public may view the status of proposed OGDG applications through the COGCC eFiling System by creating an account in the Applications and Docket Portal, available on the “Hearings Page.”

1. Go to www.COGCC.state.co.us and click on the green “Commission Hearings” button:



2. On the right-hand side of the Hearings page, in the Operator Tools box header, click on “Application and Docket Portal”:



3. Create a user account by clicking “Request Access to Site,” and completing the required registration information. There may be a delay for processing following your request before

you are granted access. Check your email for access approval.

4. Once registration is complete, access the Application and Docket Portal by entering your user name and password.
5. At the bottom left of the page, find the panel labeled “Find Hearing Application by Docket Number” and enter the 9-digit docket number provided by the operator in their cover letter in the field named “Docket Number”:

Find Hearing Application by Docket Number

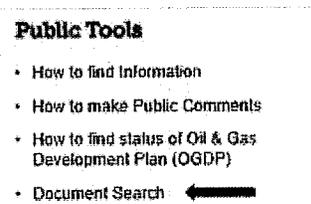
SEARCH	RESULTS
Docket Number	210012345

6. The general status of the docket is listed in the first column on the left, titled “Docket Status.”
7. Double click the docket search result to load the docket’s main page, which will show additional information, including the application type, status, assigned Hearing Officer, and applicant information.

Do I have to create an account to view documents?

No. You may view documents through the “Document Search” described below without creating an eFiling System account, but you will not be able to view the “status” of the docket through this method.

1. On the right-hand side of the Hearings page, in the Public Tools box, click on the “Document Search” link:



2. From the “Search Type” dropdown menu, select “DNRCOG Search for Docket Related Documents”:

Search Type

DNRCOG New Applications	▼
DNRCOG New Applications	
DNRCOG New Documents	
DNRCOG Search for Docket Related Documents	

- Input the docket number provided by the operator.

DNRCOG Docket Number

- If you don't have a docket number, or to view any OGD, scroll down to the "DNRCOG Application Type" dropdown menu and select "OIL & GAS DEVELOPMENT PLAN":

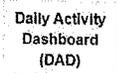
DNRCOG Application Type

- ADDITIONAL WELLS
- COMPREHENSIVE AREA PLAN
- ENFORCEMENT
- EXCEPTION LOCATION
- GENERAL ADMINISTRATIVE
- OIL & GAS DEVELOPMENT PLAN**
- OTHER

- Scroll down and click the "Search" button.
- A table of all related documents will appear. Click on any item to view its contents or download to your computer.

How do I view general forms, permits, and data regarding permits and OGDs?

Use the Daily Activity Dashboard (DAD) to access frequently requested oil and gas data at the county and state levels. The DAD link is located in the right-hand corner of the COGCC homepage:



It allows you to generate statistical charts, graphs, tables, and maps for information including pending permits, well status, production, well inspections, Notices of Alleged Violation, active notifications, and spills. The COGCC also provides access to pending and approved permits through its "Permits Search" and interactive map on the COGCC website.

To view the status of pending Form 2As (Oil and Gas Location Assessment Permits) through the "Permit Search" function, follow the steps outlined below:

- Click "Permits" in the green menu bar on the COGCC homepage. This will take you to the "Drilling and Location Permits Search" page.
- Under Pending Permits, find "Oil & Gas Location Assessment Permits (Form 2A)". Select "All Counties" or a specific county using the drop down menu and click "Go!":

Pending Permits (Filed ON or AFTER January 15th, 2021)

Oil & Gas Location Assessment Permits (Form 2A):

- A table will show all pending Form 2As currently under review by the COGCC.

Pending Location Permits - All Counties

Doc Number (Public Comments Link)	Doc Title (Click on link)	Doc Status	Doc Date	Doc Type	Doc Count	Doc Range	Doc Status
210012345	Oil & Gas Location Assessment Permit	Pending	01/15/2021	Oil & Gas	1	45	PENDING
210012346	Oil & Gas Location Assessment Permit	Pending	01/15/2021	Oil & Gas	1	46	PENDING
210012347	Oil & Gas Location Assessment Permit	Pending	01/15/2021	Oil & Gas	1	47	PENDING

- Clicking a "Doc Number" link will take you to the Public Comments portal for that pending permit.
- Clicking a "Location Name" link will take you to a list of documents related to that permit, including the Form 2A (as submitted by the operator) and supporting documents that are attached to the pending permit application.

Can I view pending applications on the COGCC Map?

Yes. You may access the COGCC GIS Online Interactive Map by clicking "Maps" in the green banner on the COGCC homepage, then click "Click HERE to access interactive map". You may use the "address search" option to zoom to your address to see oil and gas activity near you. With the map zoomed to your area of interest, you may specify pending permits by checking the appropriate boxes on the left-hand menu:

Permits
 Pending Well (Form 2) Permit
 Approved Well (Form 2) Permit
 Pending Location (Form 2A) Permit
 Approved Location (Form 2A) Permit

To select and view a pending application, use the arrow tool to double-click on the pending icons to display the Application.

Where can I get additional information?

COGCC Homepage:

<https://cogcc.state.co.us/#/home>

Hearings Page:

<https://cogcc.state.co.us/reg.html#/hearings>

eFiling system help:

http://cogcc/documents/reg/Hearings/External_E_filing_System_Users_Guidebook_20201109.pdf

COGCC GIS Online Interactive Map help:

<http://cogcc/documents/about/Help/Search%20pending%20permits%20on%20the%20COGCC%20map.pdf>

May 24, 2018

**Meghan Grimes
Petroshare Corporation
7200 S. Alton Way
Centennial CO 80112**

Attention: Meghan Grimes

**Subject: Wakeman 20-17 Pad Site Ambient Sound Level Survey & Model – Unincorporated Adams
County, CO**

Dear Ms. Grimes,

The following Ambient Sound Level Survey and Noise Impact Model was developed for your future Wakeman 20-17 pad site located in Unincorporated Adams County, Colorado. The noise levels produced by the drilling and fracturing operations at the site could possibly exceed the noise standards set forth by the Colorado Oil & Gas Conservation Commission, AESTHETIC AND NOISE CONTROL REGULATIONS section of the ordinance. The following report documents the ambient sound levels, identifies the noise sources for drilling / fracturing operations and includes noise mitigation models for both scenarios.

Site Location and Conditions

The Wakeman 20-17 pad site is located off East 136th Ave approximately 4/10 mile west of Powhaton Road. The nearest occupied structure is a single-family residential property and is located approximately 1,808 feet east of the well head. Open pastures surround the location and residential properties are located around the pad site. The topography of the location is predominantly flat in all directions surrounding the location. Lease road entrance and well head coordinates are below.

Lease Road Coordinates

39°56'35.50"N
104°40'42.25"W

Well Head Coordinates

39°56'38.46"N
104°41'07.34"W

Weather Conditions

The average temperature was between 45°F - 77°F throughout the entire duration of the survey with an with up to 0.35" of precipitation due thunderstorms recorded during the survey.

(Continued on Next Page)

Texas Office

1763 N. Main Street
Weatherford, Texas 76085
Office: (817) 594-4446 Fax (817) 594-4472

Colorado Regional Office

2700 E. Bridge Street - Suite C
Brighton, Colorado 80603
Office: (720) 517-2552

Pennsylvania Regional Office

800 Imperial Industrial Park Drive
Oakdale, Pennsylvania 15071
Office: (304) 670-0095 Fax (817) 594-4472

Sound Level Survey Instrumentation

A Brüel and Kjær 2250 Type 1 Hand-held Analyzer sound level meter was programmed, field calibrated, and deployed south of the pad site near the residential properties. The meter was programmed to measure the A-weighted (dBA) C-Weighted (dBC) and the frequency noise levels. The metering system was installed on a t-post approximately 4 feet above ground level in a locked weatherproof enclosure for security purposes. Figure 1 displays the future drill site and the ambient noise measurement location.

C.O.G.C.- AESTHETIC AND NOISE CONTROL REGULATIONS

- a. The goal of this rule is to identify noise sources related to oil and gas operations that impact surrounding landowners and to implement cost-effective and technically feasible mitigation measures to bring oil and gas facilities into compliance with the allowable noise levels identified in subsection c. Operators should be aware that noise control is most effectively addressed at the siting and design phase, especially with respect to centralized compression and other downstream “gas facilities” (see definition in the 100 Series of these rules).
- b. Oil and gas operations at any well site, production facility, or gas facility shall comply with the following maximum permissible noise levels.

ZONE	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/Agricultural/Rural	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

The type of land use of the surrounding area shall be determined by the Director in consultation with the Local Governmental Designee taking into consideration any applicable zoning or other local land use designation. In the hours between 7:00 a.m. and the next 7:00 the noise levels permitted above may be increased ten (10) dB(A) for a period not to exceed fifteen (15) minutes in any one (1) hour period. The allowable noise level for periodic, impulsive or shrill noises is reduced by five (5) dB(A) from the levels shown.

Ambient Sound Level Survey

A 72-hour pre-drilling ambient noise survey was taken at the Wakeman 20-17 pad site from Sunday, May 13, to Tuesday, May 15, 2018, to measure and document the pre-drilling ambient sound levels at the site. Noise sources observed by the technician during the ambient noise survey include insects, birds, and other wildlife as well as nearby road traffic to the south.

(Continued on Next Page)

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Ambient Measurement Results

The ambient sound level data collected at the site is attached in both a graphed and tabular form, along with the established 72-hour ambient sound levels. The measured 3-day average sound level was 56.3 dBA and 69.2 dBC.

Summary of Findings

We can expect the following LAeq averages to be produced by the unmitigated operational equipment during specific operations when measured at the nearby residence as shown in figure 6 & 8.

Operations Type	Expected Sound Levels
Drilling	50-56 dBA
Fracturing	52-60 dBA

If at any time during the operations, the noise levels remain above the maximum permissible noise levels, mitigation techniques defined in this plan may be utilized.

Noise Impact Model Results

The *unmitigated noise impact models* for drilling and fracing are included as Attachments 6 & 8. It displays an estimated sound level of 50-56 dBA for drilling and 52-60 dBA for fracing operations when measured at the property line. The *mitigated noise impact models* are included as Attachments 7 & 9. It displays the estimated sound levels to be between 40-48 dBA for drilling and 43-49 dBA for fracing operations with the installation of a noise barrier. The noise barrier would decrease the overall noise level of the drilling operations by 8-10 dBA and 10-12 dBA for fracing operations at the receiver. To properly adhere to the C.O.G.C. and to mitigate the noise at the receiver, we recommend constructing a 16' tall temporary sound wall to be installed on the perimeter of the pad site as shown in figures 7 & 9. The sound wall should be constructed as close to the equipment in question to effectively mitigate the sound levels. The sound wall should be a minimum of a STC-27 rating.

(Continued on Next Page)

Noise Impact Potential

The typical primary noise sources generated by gas well drilling operations include the drilling rig engines, compressors, generators, mud pumps, shakers, and ancillary support equipment. Drilling sound levels vary from drill site to drill site depending on the type of drilling rig (top drive, rotary table, etc.) and depending on the drilling rig orientation at the site. The highest drilling related noise levels are typically measured on the generator side of the rig.

The maximum noise levels generated during gas well fracturing operations are produced from the truck mounted engines which drive the high pressure pumps. Support equipment such as sand trucks, water pumps and generators have a small contribution to the over-all noise levels of the operations. Off-site fracturing noise levels typically do not vary greatly from operator to operator, but the off-site transmission of the noise can be affected by the surrounding topography of the fracing site.

Noise impact models were created to evaluate and predict the noise impact potential of typical drilling and fracturing operations on the site’s adjacent surroundings. Noise mitigation measures were included in the models to ensure compliance with the allowable drilling noise levels established above.

The results of the noise impact models are included in Figures 6-9 to this report. Figures 6 and 8 display the *unmitigated sound levels* for drilling and fracturing operations. Figures 7 and 9 display the *mitigated sound levels* for drilling and fracturing operations.

Noise Mitigation Recommendations

Activity

Install a 16ft. tall temporary acoustical sound wall on the perimeter, with an STC-27 rating or higher drilling, fracturing

Orient the drilling rig such that the generators are on the north side of the wellhead to maximize the distance between the generators and the regulated receivers drilling

Orient and position fracturing trucks to minimize the distance between the pump trucks and the acoustical walls fracturing

Additional Noise Mitigation Measures (if necessary)

Activity

Install 16ft. high, 3-sided generator enclosure drilling

Install rig floor acoustical blankets on east, south & west sides to block the line-of- sight noise transmission to the regulated receivers drilling

(Continued on Next Page)

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Although elevated low frequency noise levels are not anticipated at this site, if compliance measurements reveal a low frequency noise issue, install acoustical barriers specifically designed for blocking low frequency noise transmission from shaker table, mud pumps, and/or fracturing pump trucks.

drilling, fracturing

Please contact us if you have any questions or comments.

Sincerely,

Bradley Webb
V.P. of Operations
Absolute Noise Control
(817) 565-8464



Attachments

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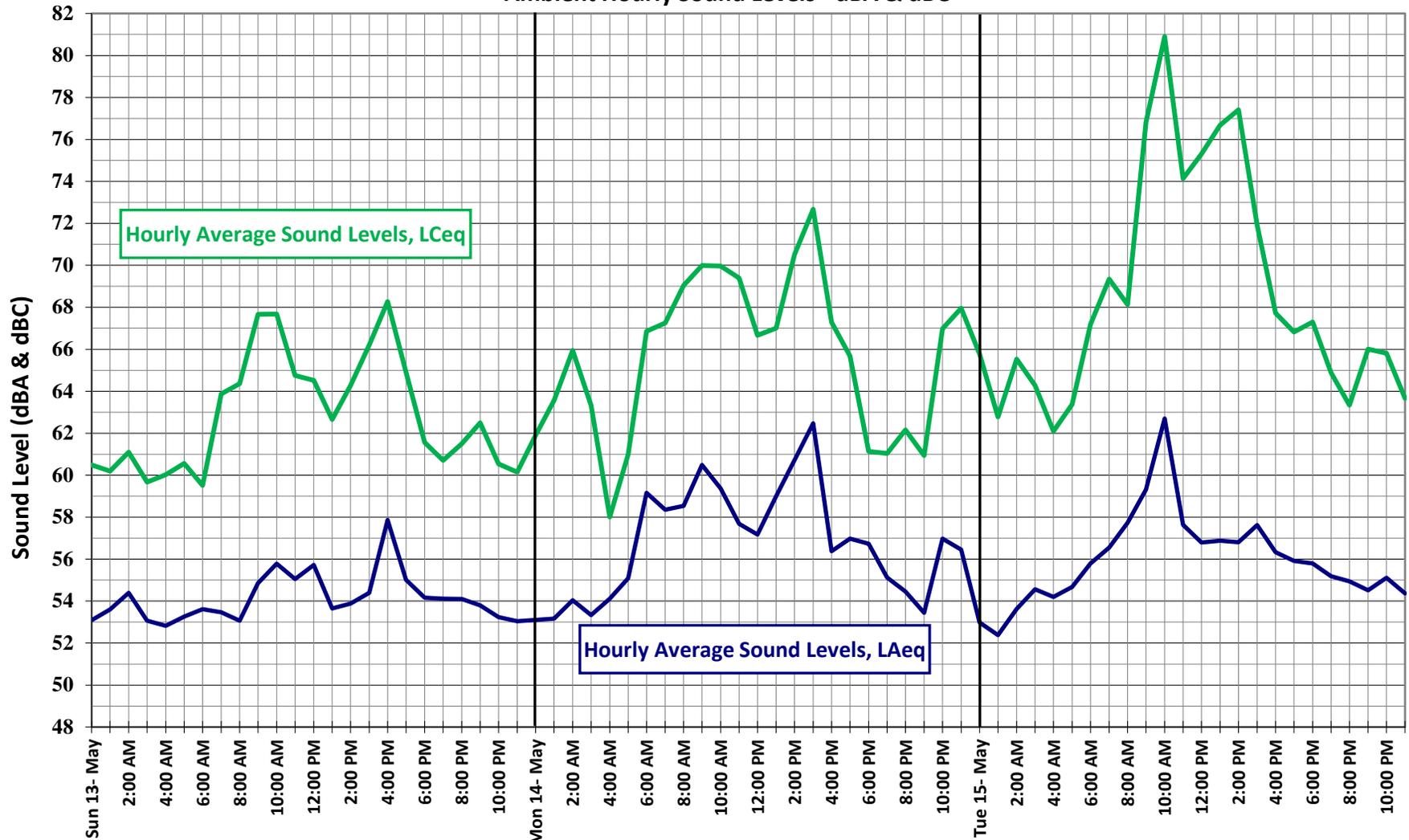
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Figure 1.
Wakeman 20-17 Pad Site & Noise Measurement Location

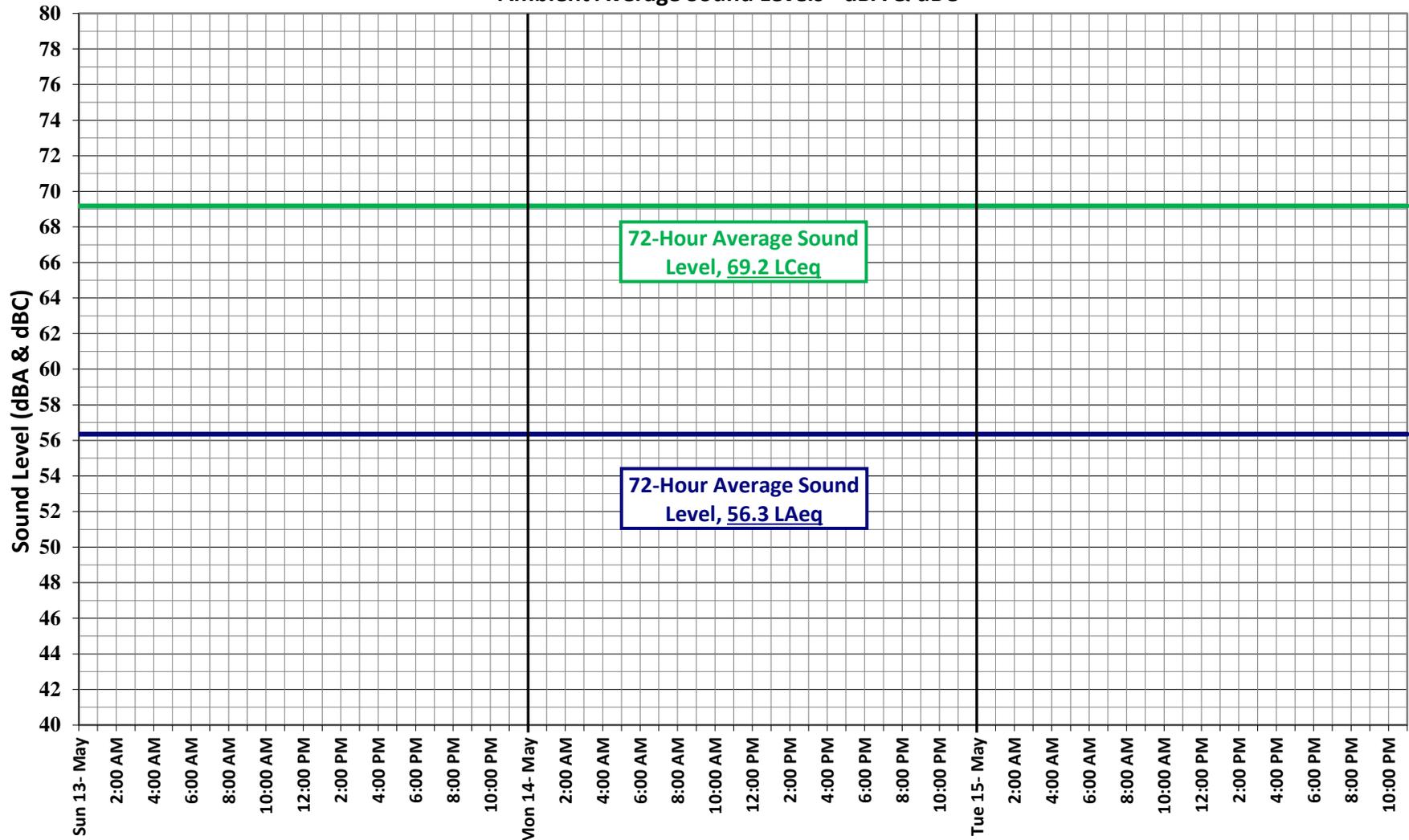
Petroshare Corporation
Wakeman 20-17 Pad Site
Ambient Hourly Sound Levels - dBA & dBC



May 13 - May 15, 2018

Figure 2.
Wakeman 20-17 Pad Site – Hourly Average dBA & dBC

Petroshare Corporation
Wakeman 20-17 Pad Site
Ambient Average Sound Levels - dBA & dBC



May 13 - May 15, 2018

Figure 3.

Wakeman 20-17 Pad Site – 72 Hour Average dBA & dBC

Petroshare Corporation
Wakeman 20-17 Pad Site
Allowable Sound Levels - dBA

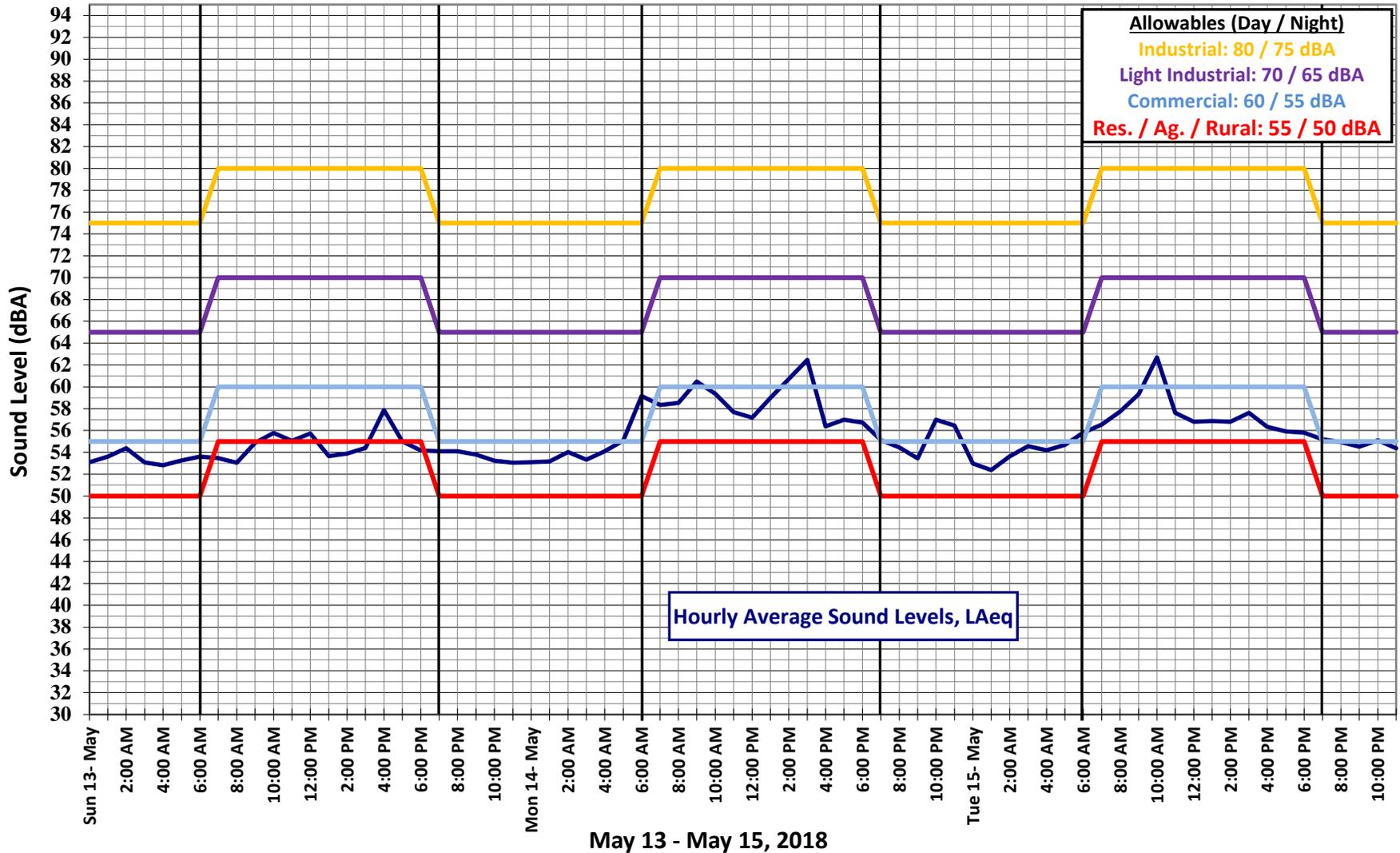


Figure 4.
Wakeman 20-17 Pad Site – Allowable Sound Levels

Wakeman 20-17 Pad Site					
Time	LAeq	LCeq	Time	LAeq	LCeq
Sun 13- May	53.1	60.5	1:00 PM	59.0	67.0
1:00 AM	53.6	60.2	2:00 PM	60.7	70.5
2:00 AM	54.4	61.1	3:00 PM	62.5	72.7
3:00 AM	53.1	59.7	4:00 PM	56.4	67.3
4:00 AM	52.8	60.0	5:00 PM	57.0	65.7
5:00 AM	53.3	60.6	6:00 PM	56.7	61.1
6:00 AM	53.6	59.5	7:00 PM	55.1	61.0
7:00 AM	53.5	63.9	8:00 PM	54.5	62.2
8:00 AM	53.1	64.4	9:00 PM	53.4	60.9
9:00 AM	54.9	67.7	10:00 PM	57.0	67.0
10:00 AM	55.8	67.7	11:00 PM	56.5	68.0
11:00 AM	55.1	64.8	Tue 15- May	53.0	65.8
12:00 PM	55.7	64.5	1:00 AM	52.4	62.8
1:00 PM	53.7	62.7	2:00 AM	53.6	65.5
2:00 PM	53.9	64.3	3:00 AM	54.6	64.3
3:00 PM	54.4	66.2	4:00 AM	54.2	62.1
4:00 PM	57.9	68.3	5:00 AM	54.7	63.4
5:00 PM	55.0	64.9	6:00 AM	55.8	67.2
6:00 PM	54.2	61.6	7:00 AM	56.6	69.4
7:00 PM	54.1	60.7	8:00 AM	57.7	68.1
8:00 PM	54.1	61.5	9:00 AM	59.3	76.8
9:00 PM	53.8	62.5	10:00 AM	62.7	80.9
10:00 PM	53.2	60.5	11:00 AM	57.6	74.1
11:00 PM	53.0	60.1	12:00 PM	56.8	75.3
Mon 14- May	53.1	61.9	1:00 PM	56.9	76.7
1:00 AM	53.2	63.6	2:00 PM	56.8	77.4
2:00 AM	54.0	65.9	3:00 PM	57.6	71.9
3:00 AM	53.3	63.3	4:00 PM	56.3	67.7
4:00 AM	54.1	58.0	5:00 PM	55.9	66.8
5:00 AM	55.1	61.0	6:00 PM	55.8	67.3
6:00 AM	59.2	66.9	7:00 PM	55.2	64.9
7:00 AM	58.4	67.3	8:00 PM	54.9	63.3
8:00 AM	58.5	69.0	9:00 PM	54.5	66.0
9:00 AM	60.5	70.0	10:00 PM	55.1	65.8
10:00 AM	59.4	70.0	11:00 PM	54.4	63.7
11:00 AM	57.7	69.4			
12:00 PM	57.2	66.7			
				LAeq	LCeq
			72-Hour (3-day)	56.3	69.2
			Average:		

Figure 5.
Wakeman 20-17 Pad Site – Ambient Sound Level Data

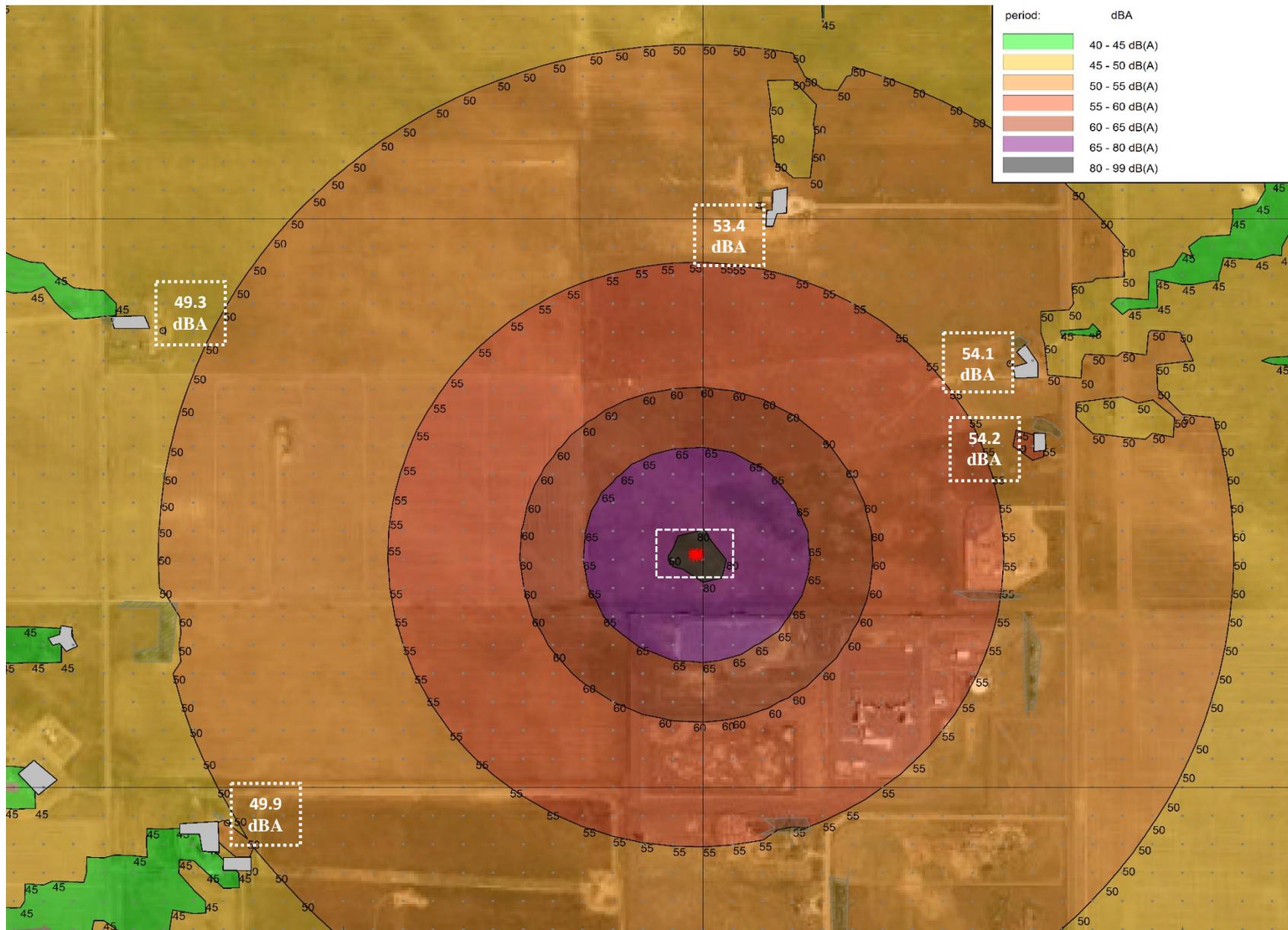


Figure 6.
Wakeman 20-17 Pad Site – Unmitigated Drilling Operations

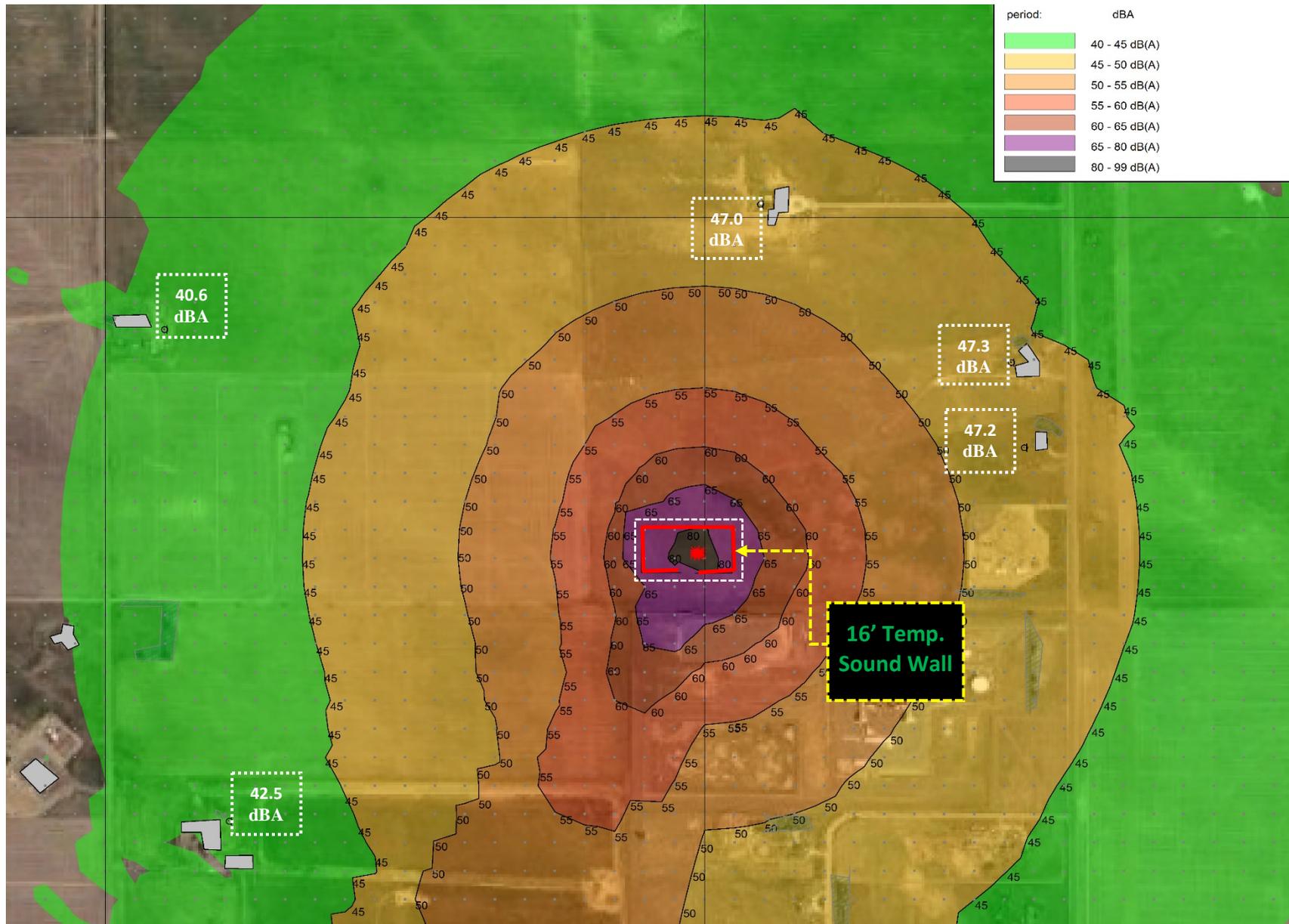


Figure 7.
Wakeman 20-17 Pad Site – Mitigated Drilling Operations

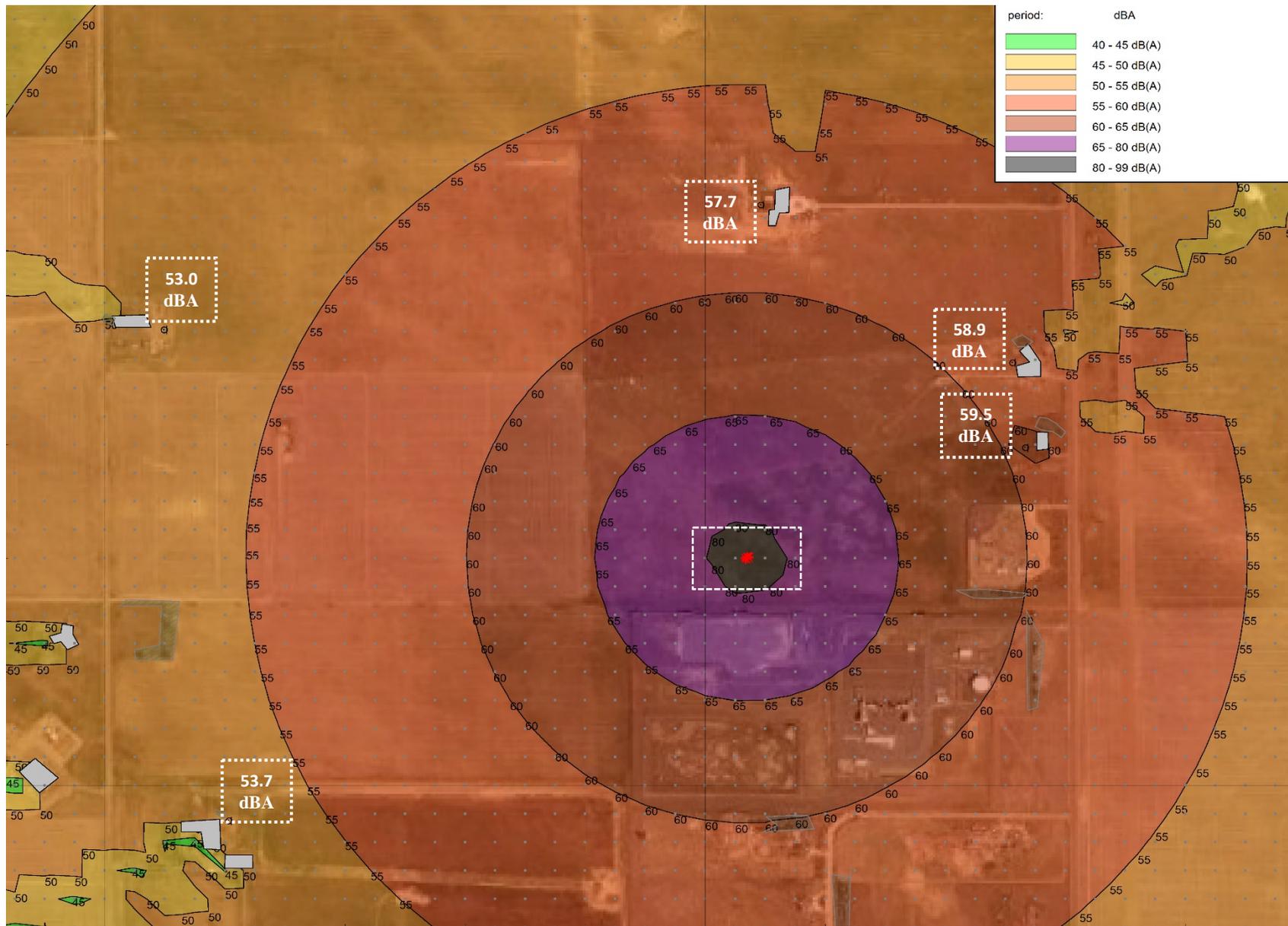


Figure 8.
Wakeman 20-17 Pad Site – Unmitigated Facing Operations

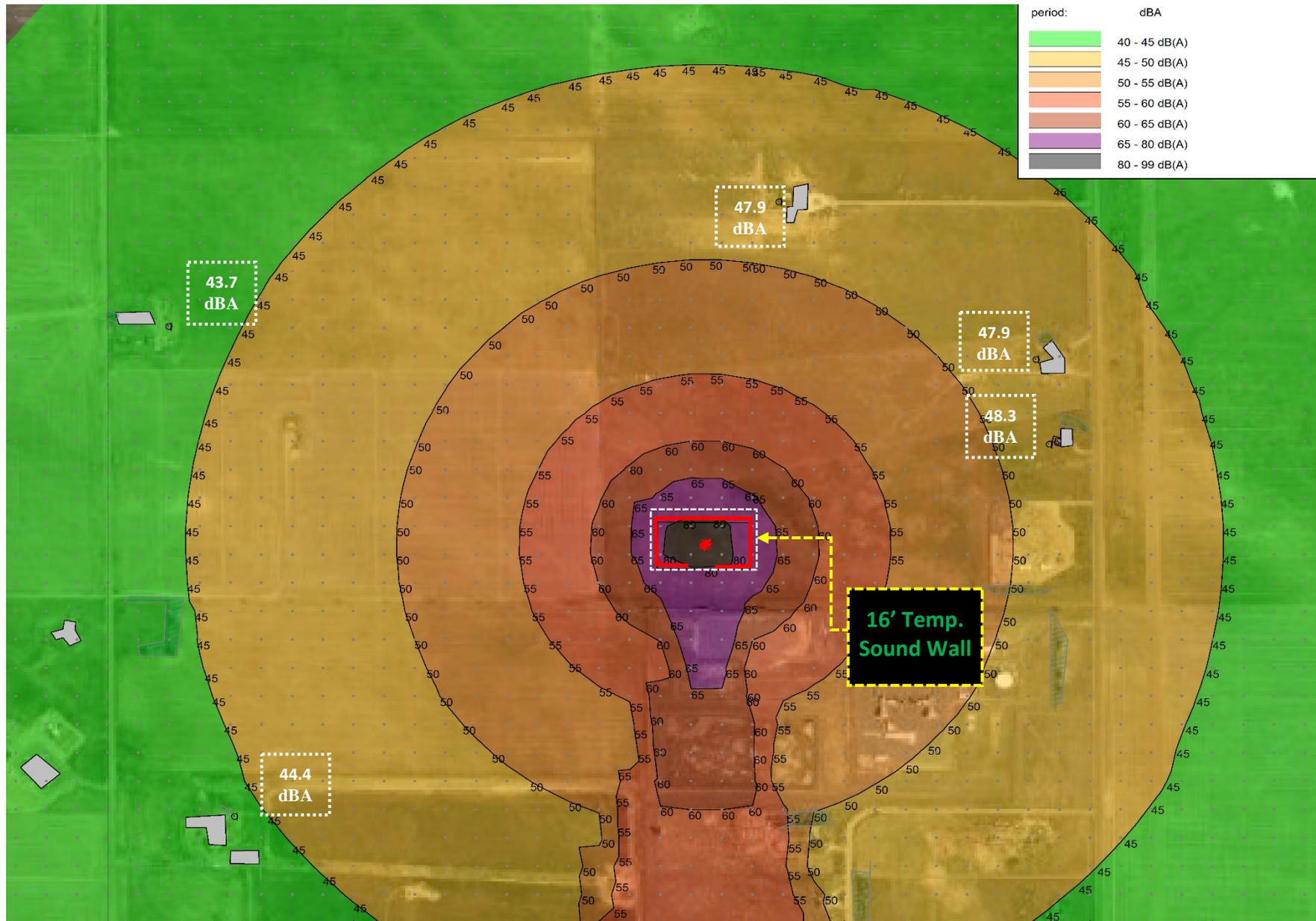


Figure 9.
Wakeman 20-17 Pad Site – Mitigated Facing Operations

BEST MANAGEMENT PRACTICES

- The operator will install 16' noise barrier around the perimeter of the pad during drilling and completions.
- The drilling rig will be oriented such that the generators are on the north side of the wellhead to maximize the distance between the generators and the regulated receivers
- Fracturing trucks will be oriented to minimize the distance between the pump trucks and the acoustical walls
- One monitor will be placed centrally located on the east side of the pad and the north side. The operator will perform continuous monitoring during active operations.



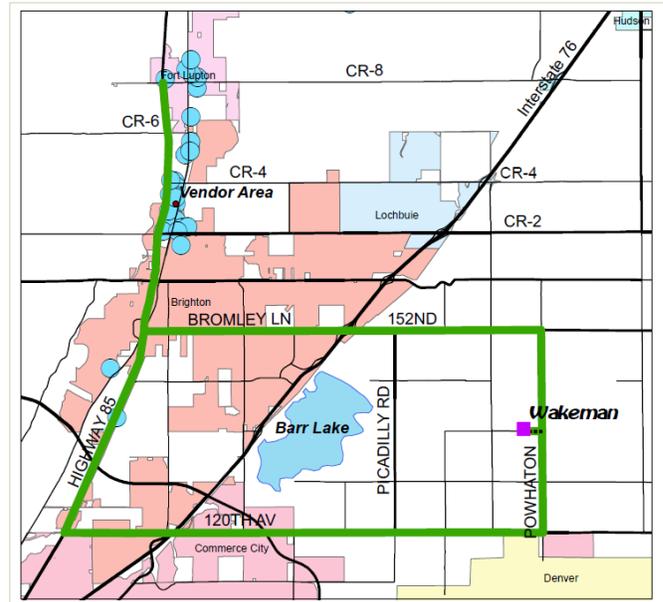
Wakeman Well Pad Traffic Study

Summary:

PetroShare Corporation plans to drill 16 wells, with two-mile long horizontal sections, at their Wakeman Well Pad, located in Adams County, Colorado.

Supplies and equipment are anticipated to be sourced primarily from Brighton and Ft. Lupton along the US-85 corridor.

The peak trucking will be during gravel hauling at 26 trucks per hour; however, because fracturing is a 24-hour per day activity, the most intense activity is expected during sand hauling for fracturing, at 14 trucks per hour. Trucks are counted as they enter the pad, and re-counted as they leave.



The total number of truck trips, through the first year of production, is estimated at 25,700 trips, considering that source water is to be pipelined. Oil production will be pipelined, reducing trucking by about 14,000 trips.

Prepared By:

Lisa Denke, PE
lldenke@earthlink.net
661-547-2770



May 15, 2018
Lisa L. Denke, PE

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Traffic Study

Purpose

This report supports the USR permit application for PetroShare’s proposed Wakeman well pad in Adams County, Colorado. The truck count has been developed, along with a timeline for operations. The flowback/production phase has been defined as one year for this analysis. Routing maps for the main route from the supplier area in Brighton/Fort Lupton, for the cuttings disposal to Tower Landfill, and for flowback water have been created.

Safety, Environmental, and Regulatory Considerations

The Adams County Administrative Use by Special Review (AUSR) process is outlined in the Adams County Development Standards¹. The following Chapters are the most applicable:

- Chapter 2 – Application and Permitting Procedures
- Chapter 8 - Access Design and Traffic Requirements; Guidelines for Traffic Impact Studies
- The County Transportation Plan is also relevant.



Figure 1. Road classifications excerpted from Adams County Transportation Master Plan. All roads shown are arterials or larger in the Plan.

These documents have been reviewed for guidance.

Some roads to be used are in the City of Brighton.

Per the City of Brighton Code, Section 10-13-30 (c): “The Traffic Engineer shall post with appropriate signs truck routes and those routes that are prohibited or restricted.”

We drove out the arterial roads in the area to look for truck routes and found the following:

- Bromley Lane is marked as a truck route at CO-2 (4th Avenue), near Sakata Farms. Intertape Polymer Group, south of Sakata Farms, is observed to be another truck-dependent business.
- At US-85, the Bromley Lane intersection facilitates deliveries to the Walmart Supercenter, O’Neal Flat Rolled Metals, and other truck-dependent businesses.
- The I-76 interchange for Bromley Lane facilitates access for the Sears Distribution Center, as well as Transwest Truck, Trailer & RV of Brighton. We conclude that Bromley Lane is a truck route at this location because of the truck-dependent land uses that have been permitted there.

CDOT Designated Routes for HAZMAT affect routing. Hazardous materials loads must use Designated Routes to the turnoff to the delivery route, and then take the most direct route to the delivery point. We consider a “direct route” to be a route that is short, and also a route that avoid difficult maneuvers, such as turning at busy,

¹ <http://www.adcogov.org/development-standards-regulations>

uncontrolled intersections. US-85 is a Designated Route, and many oilfield vendors are located on US-85 in Brighton and Fort Lupton. For this report, materials are assumed to be sourced from Brighton and Fort Lupton. Materials may be sourced from areas along I-76, which is also a Designated Route. There are no other Designated Routes in the area. On exiting either of these roads, the trucks will proceed on Bromley Lane/152nd Avenue, or on 120th Avenue, and take the most direct route to the delivery point. Most of the hazardous materials loads consist of diesel fuel for motors on the pumps and on the rig.

Oversize/overweight permits will be purchased from the appropriate jurisdictions by the contractors as needed for the trucks.

Characteristics of Well Pad/Assumptions

Certain parameters are key in determining the amount and timing of truck traffic. For this pad, key parameters include:

- 16 wells will be drilled and completed, with laterals of about 2 miles length. Lengths used for calculations will be per the Form 2A's filed with the COGCC and will not be exactly 2 miles.
- Well design is to consist of 16" conductor pipe, 9-5/8" surface pipe to 1800', 5.5" production casing to 18,000'. All strings are to be cemented to surface.
- The wells will be drilled and completed in a single drilling round. A smaller rig will be used for the surface hole, and a larger rig for the production hole.
- Water-based mud will be used for the surface hole, followed by oil-based mud on the production hole.
- To reduce waste mud and cuttings volumes, two sets of shale shakers and a centrifuge will be used.
- Oil production is to be piped, reducing truck trips by about 14,000 trips.
- Fracturing source (fresh) water will be calculated as trucked and as pipelined for flexibility in determining operations. Source water to be calculated at 39 bbl/foot of lateral. A Modular Large Volume Tank (MLVT) will be set up to hold source water at the site.
- Fracturing will consist of plug-and-perf operations. Approximately 8 stages of fracturing, using "zipper frac" methods, will be performed per day. Stages will be approximately 175' apart in the laterals.
- Flowback water will be trucked. Flowback water volumes will be similar to wells drilled in southern Weld and northern Adams Counties, in the Niobrara and Codell formations, adjusted for lateral length.

Truck Routes

PetroShare may elect to construct access or lease roads as needed, which may affect traffic in the immediate area of the pad by shifting the access location slightly. However, the main routes to/from the pad are expected to be:

- Vendor route to pad via US-85 to Bromley Lane/152nd Avenue, or alternately via 120th Avenue.
- Flowback route via 152nd Avenue/Bromley Lane to US-85 to 168th Avenue/WCR-2, or alternately via Interstate 76.
- Cuttings disposal route via 120th Avenue to Tower Road. It is assumed that this route will be acceptable to CDOT for HAZMAT instead of utilizing I-76, the nearest Designated Route, since driving to I-76 would result in a circuitous route.

- For Wakeman Pad, an existing trail leading west from Powhatan Road on the alignment of 136th Avenue will be improved for a distance of approximately 0.4 miles. This access is shown in the figure below.

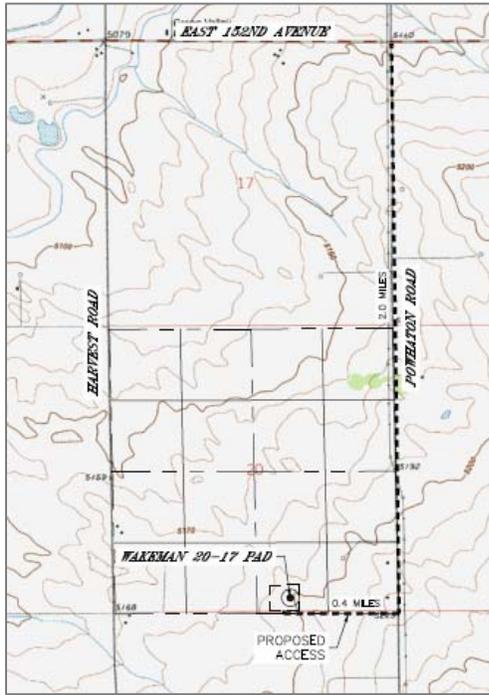


Figure 2. Excerpt from Access Road Map by Lat40°, Inc, showing proposed access.

Depending on local traffic conditions, other routes may be utilized. Temporary activities, such as construction or high levels of activity due to sporting or other events, may affect traffic conditions. Weather conditions can make use of certain roads inadvisable. During these conditions, it may be necessary to re-route the trucks. The drivers and supervisors will consider local conditions and choose new routes if needed.

Very large trucks, such as the truck carrying the drilling rig mast (derrick), will be routed by professional heavy haul companies. These companies specialize in obtaining the necessary permits and moving large equipment. The routes will be filed with the appropriate jurisdictions prior to moving the equipment.

PetroShare Wakeman Well Pad

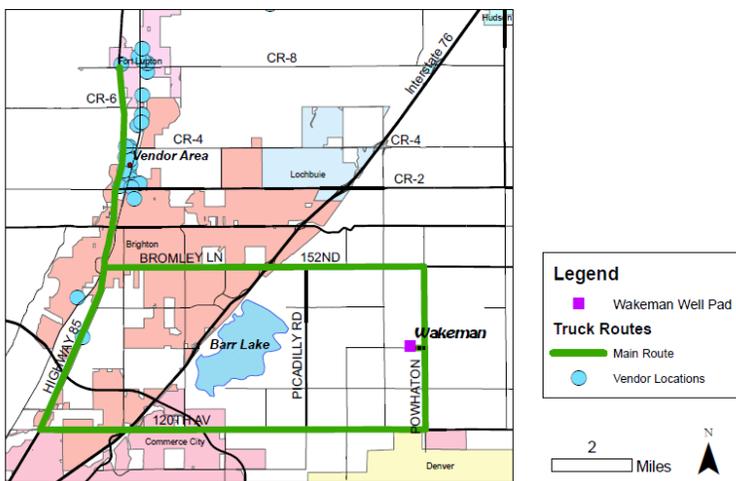


Figure 3. Main route from vendor area in Brighton/Ft. Lupton to Wakeman well pad.

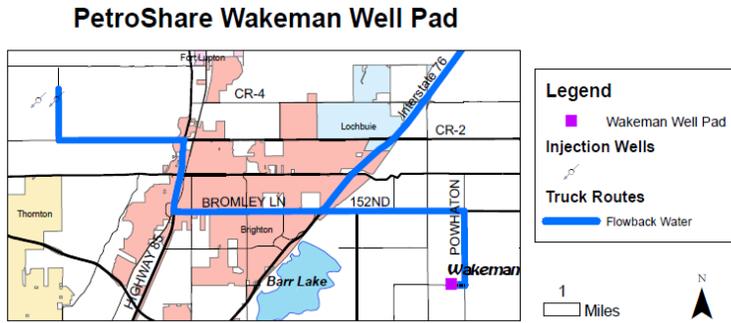


Figure 4. Flowback water route from Wakeman well pad to injection wells. Route may vary depending on which injectors are permitted for this pad.

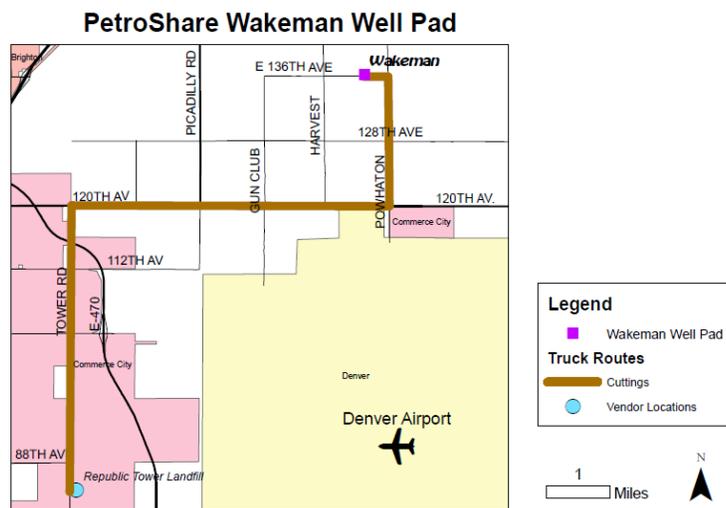


Figure 5. Routing for cuttings disposal to Tower Landfill. Routing will vary if another landfill is used.

Estimated Schedule

The phases of operations are expected to consist of Pad Construction, Facilities Construction, Drilling, Completions (Fracturing), and Flowback/Production. Calendar days per phase are estimated per the following table.

Table 1. Estimated Schedule

Phase	Time
Pad Construction	26 Days
Facilities Construction	70 Days
Drilling	132 Days
Completions (Fracturing)	114 Days
Drillout	26 Days
Flowback/Production	365 Days

Production will continue after the first year, however, since oil will not be trucked, and water production will drop to minimal levels, trucking will be minimal. Trucking is therefore calculated for one year. Gas production

will also occur. Since gas is a low density product, it is not practical to ship it by truck, and it is shipped by pipeline.

Unscheduled Activities

After the schedule shown above is complete, occasional trucking will occur in conjunction with well maintenance activities. Minor trucking may be associated with upkeep of the pad, for example, with interim reclaim activities. At the end of the life of the wells, plugging will occur. Plugging is anticipated after approximately 30 years’ time.

Peak Hour Trucks and Pickups

To develop the Traffic Control Plan or to determine signal or signage warrants, the peak hour traffic counts are needed. There is no ITE standard count for well pads, so a count was developed by mass balances and by field observations. For example, sand is typically trucked in 50,000 lb increments using trucks similar to that shown below.



Figure 6. Typical sand truck and traffic control signage for well pad. Trucks slowing down to turn is one of the primary concerns, and the “Trucks Turning” sign alerts drivers to the change in traffic pattern.

The amount of sand used per well is estimated from nearby wells and from the operator’s planned pump schedule. For example, the COGCC records for Ward Petroleum’s nearby well Sharp 24-3-11HC show the following information:

Formation Treatment		Treatment Type:	FRACTURE STIMULATION
Treatment Date:	1/7/2015	Treatment End Date:	1/10/2015
Treatment summary: 20 stages: 24 bbl 15% HCL acid; 3,098,039 gal XL, 108,409 gal linear, 281,610 gal linear flush; Placed 2,983,200# 30/50 and 1,245,700# 20/40 InterProp @ AR 57.1 BPM			
Total fluid used in treatment (bbls):	87799	Max pressure during treatment (psi):	7894
Total gas used in treatment (mcf):	0	Fluid density (lbs/gal):	8.34
Type of gas:		Number of staged intervals:	20
Total acid used in treatment (bbls):	24	Min frac gradient (psi/ft):	0.9
Recycled water used in treatment (bbls):	0	Total flowback volume recovered (bbls):	7787
Produced water used in treatment (bbls):	87775	Disposition method for flowback:	DISPOSAL
Total proppant used (lbs):	3915700	Green completions techniques utilized:	True

Figure 7. COGCC screen shot for Sharp 24-3-11HC, showing 3,915,700 lb of sand was pumped.

Total sand pumped for the well was 3,915,700 lb, and dividing by 50,000 lb, we get 79 truckloads. The sand trucking numbers for this report were determined in a similar manner. Likewise, other commodities can be determined from material balance. The number of pickup trucks was determined mainly by field observation, since some of the pickups are making deliveries of materials, while others are not. Pickups (and cars) primarily are used by employees commuting to the jobsite.



Figure 8. Casing is delivered by rail and transloaded to trucks. Specialized trucks like the one shown at right are used during installation.

Table 2. Peak traffic volumes by phase. The phases with the most intense activity are boldfaced.

Phase	Peak Trucks, Outbound + Inbound, per hour	Peak Pickups, Outbound + Inbound, per hour	Peak Vehicles per Hour, Outbound + Inbound
Pad Construction ⁺	26	2	28
Facilities Construction	1	10	11
Rig Move ^x	8	10	18
Drilling	4	8	7*
Completions Equipment Mobilization ^x	12	10	22
Completions (Fracturing)	14	20	34
Drillout	7	5	12
Flowback/Production	4	20	24

+ Peak occurs during gravel hauling for pad.

x Rig Move and Completions Equipment Mobilization are one-day events.

* Peak trucking and peak pickup traffic do not normally occur at the same time. Peak trucking generally occurs when cementing equipment is brought to location, and will typically consist of a cement pump truck, cement bulk truck(s), water truck(s), and one pickup truck.

Total Truck Counts

Loaded trucks result in road impacts, while empty trucks have an Equivalent Single Axle Load (ESAL) similar to a pickup truck. Trucks are counted as they enter the site and counted again as they leave. Half of the trips can be assumed to be empty trucks.

Counts by Phase

Phase	Total Trips	Comment
Pad Construction	750	730 gravel truck trips
Facilities Construction	350	260 flowback equipment
Drilling	2500	Mainly materials deliveries and cuttings removal
Completions (Frac)	15,600	14,200 sand
Drillout	100	
Flowback/Production	6400	One year. Starts at 2000 trips/mnth, drops to 60 trips/mnth (30 inbound, 30 out) by 12 th month.
Total	25,700	

Other Truck Counts

Source (“fresh”)² water to be pumped into the wells during fracturing can be pipelined or trucked. If the source water for this pad were trucked, the amount of trucking required would be 45,000 truckloads.

Oil is to be pipelined from this pad. If the oil were trucked, the production for the first year would result in 320 truckloads. Oil is not the only product from the wells: natural gas is produced also, but is not trucked due to its low density.

At the end of the life of the wells, approximately 550 truck trips will occur in conjunction with well plugging activities.

Summary

This well pad, with 16 wells, is expected to generate 25,700 truck trips over two years’ time, including one year of production. The peak trucking will be during gravel hauling at 26 trucks per hour, however, the most intense activity is expected during sand hauling for fracturing, at 14 trucks per hour. Trucks are counted as they enter the pad, and re-counted as they leave.

Routing utilizes roads designated as arterials and truck routes where ever possible, with the general route being from 152nd Avenue/Bromley Lane to US-85.

² In some cases, recycled water is purchased for fracturing, however, some reports refer to source water as “fresh” water.

Appendix: Road Condition

The condition of several area roads was observed in March 2018.

We observed that 152nd Avenue is worn, with ruts in each lane, and cracks across the road at 10 to 15 foot intervals. Most of the cracks have been previously repaired. In a few spots there are potholes.

Picadilly Road was observed. It is not proposed as a primary route for this pad but is representative of arterials in this area.

120th Avenue was observed to be in good condition. Road salt buildup was observed.

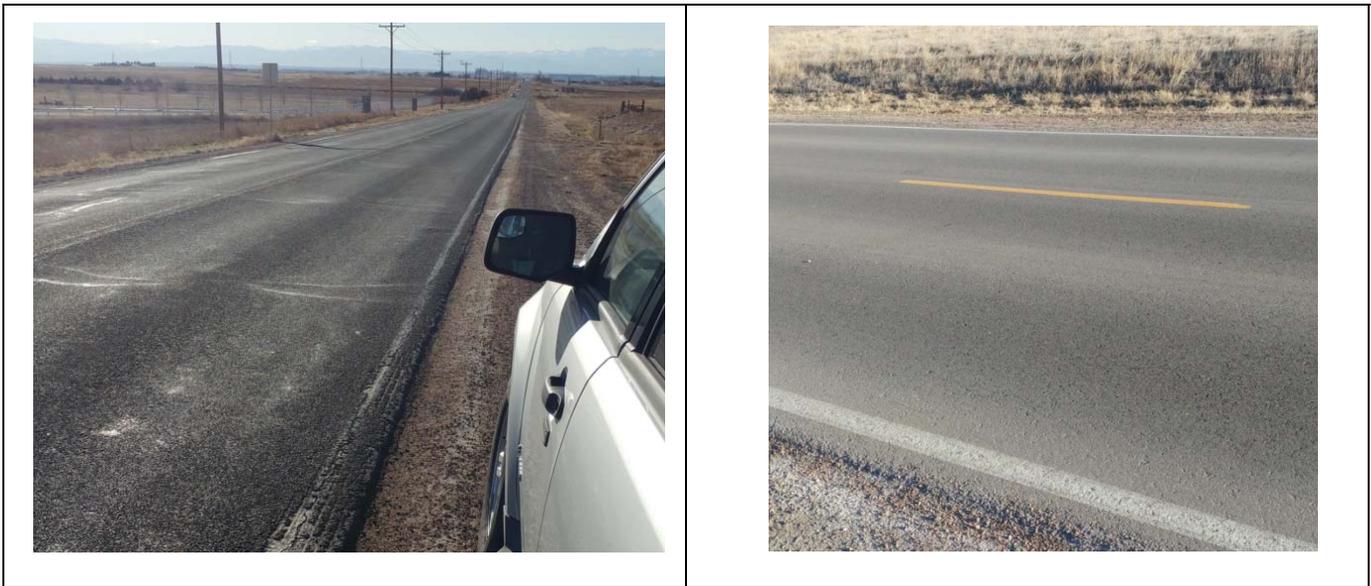


Figure 9. 152nd Avenue (left) and 120th Avenue (right).

Trucks of different kinds were observed to be using the roads. 120th Avenue is the largest road and had the most trucks. Picadilly Road appears to function as an arterial, carrying a mix of vehicles, including trucks.

The dominant truck use appeared to be residential construction, such as trucks carrying drywall, plywood, fixtures, and other products, or trucks with equipment, such as excavation equipment or cranes. During the afternoon in which observations took place, two trucks which were clearly oilfield trucks were observed. These were fracturing trucks, and were observed on Picadilly Road. Gravel and hydrovac trucks, which could support various industries, including oil and gas, were observed.

End of report.

**SITE SAFETY AND EMERGENCY SPILL RESPONSE
PLAN**

Providence Operating LLC DBA POCO Operating



Wakeman 20-17 Pad
Brighton Fire Rescue District, Brighton, Colorado

Signatory Page

The Following Site Safety Plan Approved By:

Local Emergency Response Agency: Brighton Fire Rescue District

Date of Review:

Title:

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1.0 SITE SPECIFIC INFORMATION

1.1 Site Safety Requirements and General Information

The minimum personal protective equipment (PPE) to enter any Providence Operating LLC DBA POCO Operating (POCO) production location includes hard hat, safety glasses, safety toe boots and fire-resistant clothing (FRC). All contractors and visitors are responsible for providing their employees with the appropriate training on and use of PPE while on POCO locations. In addition, all contract personnel entering a POCO location to perform work must understand and abide by POCO contractor expectations relating to environmental, health and safety requirements.

The primary hazards that any person must be aware of while on a POCO location include, but are not limited to, the potential for release of hydrocarbon gases and/or liquids from production equipment/tanks, heavy truck and equipment traffic, loud noise, high pressure and the potential for a flash fire. These hazards can vary depending on the work being performed.

1.2 Emergency Muster / Assembly Point(s)

In the event of an emergency at the Wakeman 20-17 pad, all personnel will muster at the location entrance south of the production facility and well pad on the access road toward East 136th Avenue.

1.3 911 Address and GPS Coordinates

911 Address and GPS Coordinates		
API #	05-001-10387 05-001-10388 05-001-10389 05-001-10390 05-001-10391 05-001-10392 05-001-10393 05-001-10394	05-001-10395 05-001-10396 05-001-10397 05-001-10398 05-001-10399 05-001-10400 05-001-10401 05-001-10402
Legal Description	SWSE Sec. 20 T1S R65W	
Address	No address available	
Driving Directions	From I-76E, take Exit 22 for Bromley Ln./E. 152 nd Ave. Travel east on Bromley Ln. for approximately 2.5 miles. Head south on Harvest Rd. to E 136 th Ave (approximately 2 miles). Travel east on E. 136 th Ave. for approximately 0.5 miles. Wakeman 20-17 is on the north side of E. 136 th Ave.	
Transportation Routes	It is assumed 75% of traffic will come from the direction above	
Town, CO Zip	Brighton, CO 80601	
Lat/Long	39.944060 / -104.685530	

1.4 Location Equipment

Wakeman 20-17 Equipment Estimates	
Oil Wells	16
Separators	3
Oil Tanks	2
Oil Surge tanks	1
Water Tanks	2
VRUs	2
Heater - Treaters	1
Gas Compressors	1
Electric Motors	1
LACT Unit	1
VOC Combustors	3

1.5 Other Permanent Equipment

Other Permanent Equipment Estimates	
Electrical Switch Rack	1
Water Truck Out	1
Fuel Gas Accumulator	1
Oil Truck Out	1
Surge Vessel	1
Rio Panel	1
Combustor Knockout	1
Transformer	1
67 Gallon Sump Box	1
Instrument Air	1
Riser Area	1
Recirculating Pump	1
Sales Gas Metering	1
Fuel Gas Scrubber	2

1.6 Other Temporary Equipment

Other Temporary Equipment Estimates	
Closed Flowback Tank	3
4 Phase Flowback Separator	1
Liquid & Solids Separator	1
Combustor	1
3-Sided Open Top Bin	1

1.7 Schools and Other High Occupancy Buildings

There are no schools or other high occupancy buildings within 5,280ft of location.

1.8 Nearby Residences

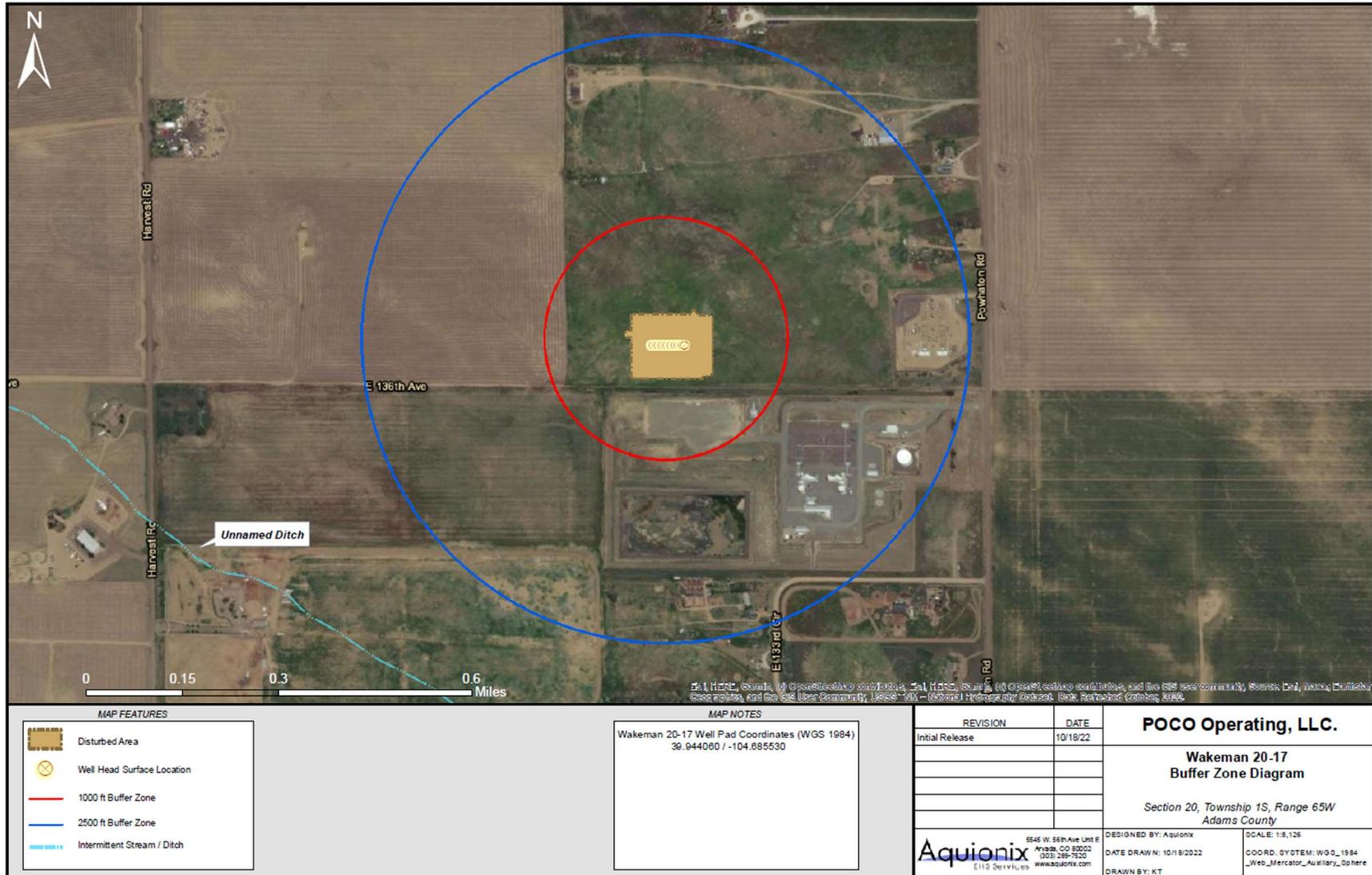
There are multiple residences within 5,280ft of the edge of the disturbed area of the location.

1.9 Location of SDS Sheets, Sign In Sheets and JSA

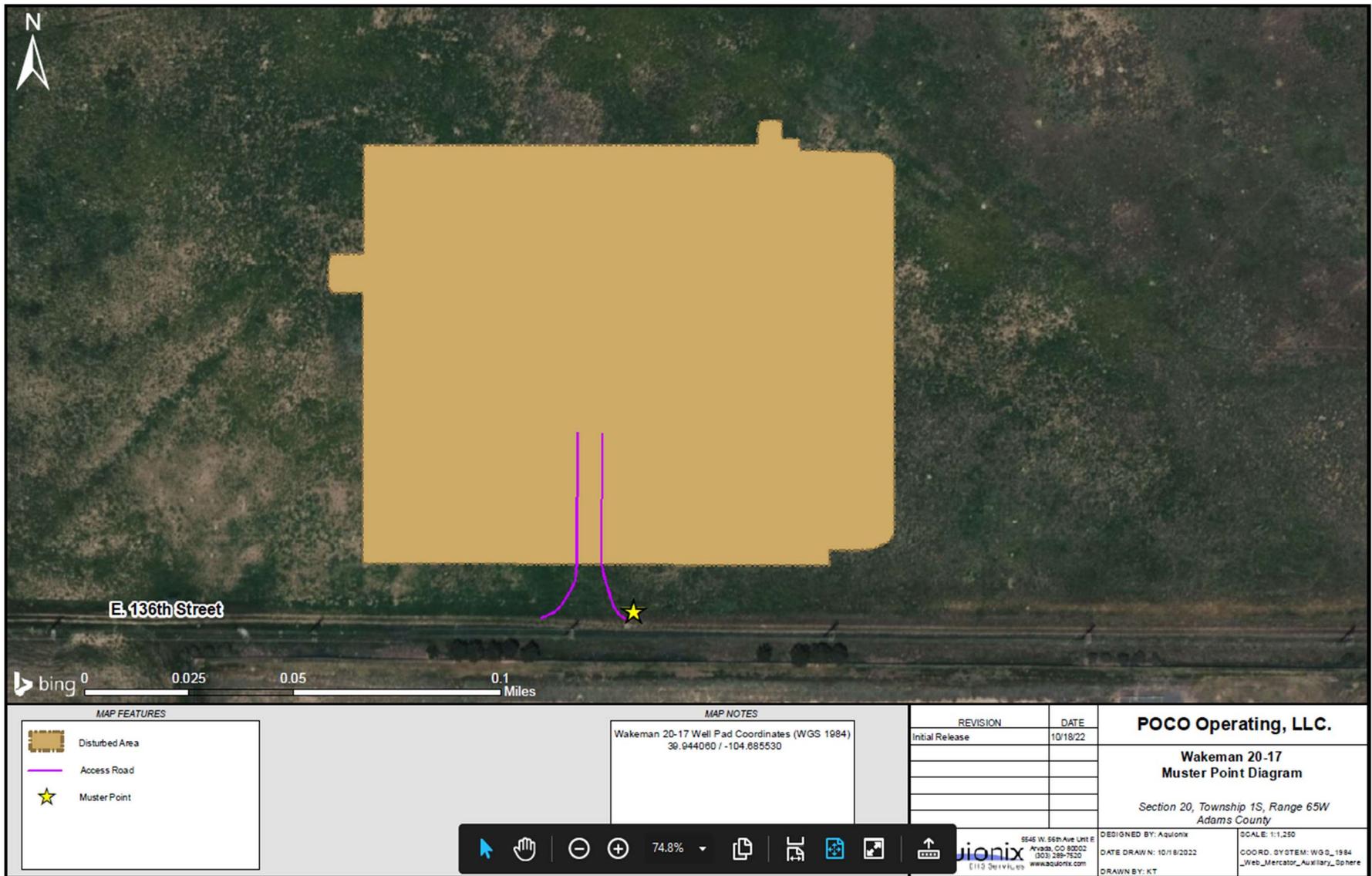
SDS sheets, sign in sheet and JSA form can be found within the POCO main offices.

2.0 PROJECT AREA MAPS

2.1 1,000' and 2,500' Buffer Map



2.2 Access Map and Muster Point



3.0 LIST OF EMERGENCY CONTACTS

3.1 POCO Contact Information

Name	Office Phone	Emergency/Cell
Providence Operating DBA POCO Operating	720-678-9349	303-349-0302 (Devin Brown)
Devin Brown VP of Operations	720-678-9349	303-349-0302
Meghan Grimes Sr. Manager of ESG	720-256-8774	720-256-8774
Jim Berger Lease Operator	N/A	970-481-6372
Josh Berger Lease Operator	N/A	970-373-8048

3.2 First Responder Contact Information

First Responders		
Name	Emergency	Office Number
Brighton Fire Rescue District	911	303-659-4101
Adams County Sheriff	911	303-654-1850
Ambulance – Platte Valley Ambulance Service	911	720-685-8420
Colorado State Patrol	911	303-237-4501

3.3 Regulatory Contact Information

Regulatory Contacts	
Name	Office Phone
COGCC	303-894-2100
CDPHE	303-692-3100
Colorado Division of Parks & Wildlife	303-291-7227
National Response Center	800-424-8802

3.4 Nearest Hospital Information

Medical Facilities		
Name	Office Phone	Notes
Platte Valley Medical Center	303-498-1600	Approximately 15 min. away
St. Anthony North Hospital	720-627-0000	Approximately 30 min. away
UCHealth Burn and Frostbite Center - Anschutz Medical Campus*	720-848-0747	Approximately 35 min. away
Burns and Reconstructive Center – Swedish Medical Center*	303-788-6466	Approximately 45 min. away
Western States Burn Center – North Colorado Medical Center*	970-810-4121	Approximately 45 min. away

***NOTE: Has a burn unit**

3.5 Spill Response organization contact information

Name	Office Phone
Freedom Drilling Services	970-673-8465

3.6 Fire, explosion associated with loss of well control

Name	Office Phone
Brighton Fire Rescue District	911 or 303-659-4101
Wild Well Control	281-353-5481
UCHealth Burn and Frostbite Center - Anschutz Medical Campus*	720-848-0747
Adams County Office of Emergency Management (Ronald Sigman)	720-523-6601

***NOTE: Has a burn unit**

3.7 Government Agencies

Name	Office Phone
Adams County Sheriff's Office	911 or 303-654-1850
COGCC	303-894-2100
CDPHE	877-518-5608
Adams County (Greg Dean, Oil & Gas Liaison)	720-523-6891

4.0 SPILL RESPONSE AND REPORTING

4.1 Spill Response

There are multiple types of hydrocarbons which can be released/spilled during oil and gas production and exploration. Most commonly released are unrefined products such as crude oil and produced water. Refined petroleum products such as diesel, gasoline and motor oil spills are less common, but still equally important to mitigate. If a spill is found reportable, it will be mitigated in accordance with Colorado Oil and Gas Conservation Commission (COGCC) and Colorado Department of Public Health and Environment (CDPHE) guidelines. Spill response guidance is further discussed in the Emergency Spill Response Plan contained within Appendix A of this plan.

4.2 Spill Reporting

What determines a reportable spill and to whom does the report go?

- (a) A spill/release will be reported to COGCC if released material is property of POCO and meets the COGCC thresholds (see below). Ex: Crude released from a separator or produced water from a water vault
- (b) A spill/release will be reported to CDPHE if released material is in the custody of a third party for spill that meet CDPHE reporting thresholds, are of any size that impact or threaten to impact waters of the state, a residence or occupied structure, livestock or public byway. Ex: Oil hauler over filling a truck that spills product onto the ground next to a flowing irrigation ditch

There are three release volume thresholds which determine if a hydrocarbon spill is reportable. These are:

- (a) If crude oil or produced water is released **INSIDE** secondary containment and volume is greater than **5 barrels**
- (b) If crude oil or produced water is **OUTSIDE** secondary containment and volume is greater than **1 barrel**
- (c) If more than **25 gallons** of petroleum product such as diesel, gasoline or motor oil is spilled **OUTSIDE** of secondary containment

Once a spill is determined reportable, there is a 24 hour deadline to make initial notification to the COGCC or CDPHE depending on product ownership. Spills/releases in the custody of POCO will be reported by a POCO representative. Spills/releases in the custody of a third party will be reported by the responsible company's Environmental, Health, and Safety (EHS) Department to the appropriate agency and to POCO.

These regulatory guidelines will be strictly followed by POCO and any contractors operating under POCO guidance during all activities at the Wakeman 20-17 pad.

5.0 EVACUATION INFORMATION

5.1 Evacuation Plan Procedures

The procedure to be used in alerting nearby person in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail.

In the event of an actual emergency, the following steps will be immediately taken:

- (a) The POCO representative will immediately notify proper authorities, including the sheriff's office, highway patrol and any other public officials as described above and will enlist their assistance in warning transients in the calculated radius of exposure.
- (b) POCO will coordinate with local authorities to warn residents down-wind of the location and within the radius of exposure from the wellsite. Additional evacuation zones may be necessary as the situation warrants.
- (c) The POCO representative will coordinate with the appropriate emergency personnel to divert traffic in the vicinity away from the potentially dangerous area. No trespassing and warning signs will be posted at the entrance to the well site.
- (d) In the event of an emergency, all personnel will be evacuated to the muster point defined in Section 2.
- (e) Contractors who may need assistance or do not speak English will be identified upon signing into the site. Procedures for assisting these individuals will be developed upon check in.
- (f) A roll call will be performed upon evacuation as a means to account of all employees, contractors and visitors.

6.0 COORDINATION WITH FIRST RESPONDER AGENCIES

POCO representatives and first responders identified in this Site Safety and Emergency Action Plan met to review this plan and discuss coordination of efforts in the event of an emergency situation requiring first responder assistance.

7.0 PLAN UPDATES

Per COGCC Rule 602.j.(2). After approval of a Form 9, Transfer of Operatorship pursuant to Rule 218.e, the Buying Operator will coordinate with the local emergency response agency to update the emergency response plan as appropriate if a transaction of the pad occurs.

APPENDIX A – EMERGENCY SPILL RESPONSE PLAN

EMERGENCY SPILL RESPONSE PLAN

Providence Operating LLC DBA POCO Operating

Wakeman 20-17 Pad



October 2022

Prepared By:



5545 W. 56th Avenue, Unit E
Arvada, CO 80002
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1.0 Introduction

1.1 Purpose and Scope

The purpose of this Emergency Spill Response Plan is to define procedures and tactics for responding to discharges of oil into navigable waters or adjoining shorelines of the United States in a timely, efficient, coordinated and effective manner from discharges occurring at POCO Holdco, LLC (POCO) Wakeman 20-17 facility. The procedures within this plan aim to provide effective management of situations that may arise from oil and gas operations. The objective of procedures described in this Plan is to protect the public, POCO personnel, and other responders during an oil discharge, and is intended to minimize damage to the environment, natural resources, and facility installations from a discharge of oil.

This Emergency Spill Response Plan has been prepared in accordance with, and follows the content and organization of, 40 CFR Part 109 and COGCC Rule 411.a.(4).B and describes the distribution of responsibilities and basic procedures for responding to emergencies, including oil discharge and performing cleanup operations.

1.2 Resources at Risk

The Wakeman 20-17 facility is located in Brighton, Colorado and is immediately surrounded by agricultural and residential properties. The distance and gradient of the well locations from navigable water makes the risk of transport of oil into the bigger creeks and rivers unlikely.

The Wakeman 20-17 pad is located within Adams County, Colorado on East 136th Avenue, approximately 2,700-feet east of the intersection of Harvest Road and East 136th Street. The pad is not located in proximity to any bodies of water. The nearest downgradient bodies of water are listed below:

Facility	Potentially Affected Water Body	Distance and Presumed Gradient from Facility	Use	Priority
Wakeman 20-17	Unnamed Ditch	~3,000 feet southwest	N/A Conveyance	First
	Denver Hudson Canal	~2 miles northwest	Agricultural Recreational	Second
	Barr Lake	~3.1 miles west	Recreational Agricultural	Second

Due to the relatively small volume of any expected discharge of oil and presume gradient, response operations are likely to be successful at containing, dispersing and/or recovering the discharge prior to any adverse impacts the nearby bodies of water. A site map showing planned flow directions and proximity to water bodies is included in Appendix A.

1.3 Risk Assessment

The Wakeman 20-17 facility is comprised of tank batteries that provide adequate secondary containment for all aboveground storage containers and process equipment located within the boundary of each battery. Flow lines situated between the wellhead and the production equipment and the aboveground storage containers are located underground. Minimal sections of aboveground piping may exist where the process lines surface to expose valving, pumps or instrumentation used during blow down procedures. Sections of these aboveground piping may be located outside the battery secondary containment.

A discharge of oil accompanied by a precipitation event of a size to cause significant storm water flow could potentially cause a discharge to navigable waters. The nearest water body is shown on the table above in

Section 1.2 and on the Buffer Zone Diagram in Appendix B.

1.4 Response Strategy

Employees and contractors shall be equipped and trained to respond to certain minor discharges confined to the facility.

A minor discharge is defined as one that poses no significant harm to human health or the environment. These spills involve generally less than 1 barrel and can usually be cleaned up by the facility operations personnel. Other characteristics of a minor discharge include the following:

- (a) Spilled material is easily stopped or controlled at the time of the spill;
- (b) Spilled material is localized; and
- (c) Spilled material is not likely to reach surface water or groundwater.

Procedures for responding to minor discharges are covered in Section 2.3 of this Contingency Plan.

A major discharge is defined as one involving a spill that cannot be safely controlled or cleaned up. Characteristics include the following:

- (a) Spill is large enough to spread beyond the immediate spill area;
- (b) Spilled material enters surface water or groundwater (regardless of spill size);
- (c) Spill requires special training and equipment to cleanup;
- (d) Spilled material is dangerous to human health and the environment; and
- (e) There is a danger of fire or explosion.

This Emergency Spill Response Plan addresses discharge incidents, including those that affect or threaten navigable waters, during which the oil cannot be safely controlled by facility personnel and confined within the facility boundaries. Employees and contractors shall be equipped, trained, and authorized to respond to discharges exceeding the criteria listed above. Response to incidents exceeding the criteria above may also require the assistance of outside contractors or other responders to prevent imminent impact to navigable waters, or to employ alternative and additional countermeasures if navigable waters are impacted.

2.0 Spill Discovery and Response

The section describes the response and protocols to follow in the event of an oil spill. An uncontrolled discharge of oil to groundwater, surface water or soil is prohibited by state and federal regulations.

2.1 Distribution of Responsibilities

POCO has the primary responsibility for providing the initial response to oil discharge incidents originating from its facilities. To accomplish this, POCO has designated a Devin Brown (VP of Operations) as the Person Responsible for Spill Prevention (PRSP) in the event of an oil discharge. The PRSP shall be responsible for coordinating any and all emergency response procedures in the event of a discharge of oil. The PRSP has the authority to commit the necessary services and equipment to respond to the discharge and to request assistance from local fire and/or police departments, as well as the contacts listed in the POCO Consolidated SPCC Plan. The name and contact information for the PRSP can be found within the table below:

Designation	Name	Office Phone	Emergency/Cell
Person Responsible for Spill Response	Devin Brown, VP of Operations	720-678-9349	303-349-0302

In addition to coordination of emergency response procedures, the PRSP shall:

- (a) Direct notifications and initial response actions in accordance with training and capabilities. In the event of a fire or emergency situation that threatens the health and safety of those present at the site, the PRSP will direct evacuations and contact the fire and police departments;
- (b) Provide information regarding the characteristics of the materials, the equipment involved, and provide access to company resources as requested for emergencies involving outside response agencies;
- (c) Take necessary measures to control the flow of people, emergency equipment, and supplies, and obtain the support of the local emergency agencies needed to maintain control of the site to minimize injuries and confusion;
- (d) Serve as the coordinator for communications by acquiring all essential information and ensuring clear communication of information to emergency response personnel; and
- (e) Have access to reference material at the field office either as printed material or on computer files that can further assist the response activities.

The PRSP shall transmit assessments and recommendations to company management during response activities. The PRSP shall contact POCO personnel as needed but has complete authority to commit company resources to the response. In the event that the PRSP is not available, the responsibility and authority for initiating a response to a discharge rests with the personnel on site at the time the discharge is discovered. The personnel shall have POCO contact information available to reference material at the field office either as printed material or on computer files that can be used to further assist in response activities. Emergency contacts for POCO at Wakeman 20-17 facility are contained within Section 3.0 of the Site Safety Emergency Response Plan.

2.2 Response Activities

In the event of a discharge, the first priority is to stop the product flow and to shut off all ignition sources, followed by the containment, control, and mitigation of the discharge. This Emergency Spill Response Plan breaks actions to be performed in response to an oil discharge into different phases, described in greater detail in the checklists below.

2.3 Discharge Discovery and Source Control

A discharge at a facility will likely be discovered by an employee or contractor during routine visits to the facility. The facility is inspected weekly for stormwater considerations and the metal containment areas are informally inspected daily in addition to the annual inspection in accordance with the requirements specified in the POCO Consolidated SPCC Plan.

In the event of a minor discharge, the following guidelines shall apply:

- (a) Immediate notification to the PRSP; and
- (b) Report the discharge, if necessary, as described in Section 2.8 of this Emergency Spill Response Plan.

In the event of a major discharge, the following guidelines shall apply:

- (a) Immediately evacuate the spill site and move a safe distance away from the spill;
- (b) The PRSP shall notify the local fire/police departments;
- (c) If injuries are incurred, a senior on-site person or the PRSP shall call for medical assistance;
- (d) The PRSP shall immediately notify POCO personnel, who shall notify the appropriate agencies (i.e. NRC and Colorado authorities (see Section 2.8)). The PRSP shall also notify personnel listed on the Discharge Contact List in Section 4.0 of this plan, as needed; and
- (e) A senior on-site person or the PRSP shall notify POCO personnel and provide details regarding the spill.

Discharge discovery and source control procedures are as follows:

Completed	Actions
	Immediately report the discharge to the PRSP, providing the following information: (a) Exact location; Material involved; Quantity involved; (b) Topographic and environmental conditions; and (c) Circumstances that may hinder response; and Injuries, if any.
	Turn off all sources of ignition.
	Turn off pumps that charge or provide flow to the flowline or leaking equipment.
	Locate the flowline/equipment break.
	If safe to do so, isolate the affected section of piping/equipment by closing off the closest valves upstream and downstream from the break.

2.4 Assessment and Notifications

Assessment and notification procedures are as follows:

Completed	Actions
	Investigate the discharge to assess the actual or potential threat to human health or the environment: <ul style="list-style-type: none"> (a) Location of the discharge relative to receiving water bodies; (b) Quantity of spilled material; (c) Ambient conditions (temperature, rain); (d) Other contributing factors such as fire or explosion hazards; and (e) Sensitive receptors downstream.
	Request outside assistance from local emergency responders, as needed.
	Evaluate the need to evacuate facility and employees, as needed.
	Notify the fire/police departments to assess whether community evacuation is needed.
	Notify the response contractor (if there assistance is needed).
	If the oil reaches (or threatens to reach) a local flowing stream, immediately notify: <ul style="list-style-type: none"> • The local fire/police departments to limit access to the water body by local residents until the oil has been contained and recovered; • The National Response Center (1-800-424-8802); and • CDPHE (877-518-5608). Additionally, notify downstream water users of the spill and of actions that will be taken to protect these downstream receptors.
	Communicate with neighboring property owners if threatened regarding the discharge and actions taken to mitigate the damage.

2.5 Control and Recovery

The PRSP shall direct the initial control response and its cleanup contractors. The response actions taken will depend on whether the discharged oil has reached water (e.g. groundwater or surface water) and if the discharge has not yet reached water, all possible effort shall be made to prevent oil contact with ground or surface water bodies. Control and recovery procedures are as follows if oil has not reached groundwater or surface water bodies:

Completed	Actions
	Contact cleanup contractor(s).
	Deploy sand bags and absorbent socks down gradient from the oil, or erect temporary barriers such as trenches or mounds to prevent the oil from flowing towards local water bodies.
	Implement land based response actions (countermeasure) such as digging temporary containment pits, ponds, or curbs to prevent the flow of oil into the water.
	Deploy absorbent sock and sorbent material along the shoreline to prevent oil from entering waters.

If oil has reached groundwater or surface water bodies, the following procedures shall be implemented:

Completed	Actions
	Contact cleanup contractor(s).
	Deploy floating booms immediately downstream from the release point or if unavailable attempt to otherwise retard the downstream flow of oil by earthen dikes or vacuum truck.
	Control oil flow on the ground by placing absorbent socks and other sorbent material or physical barriers (e.g., "kitty litter," sandbags, earthen berm, trenches) across the oil flow path.
	Deploy additional floating booms across the whole width of the creek or lake at the next access point downstream from the release point.
	Deploy protective booming measures for downstream receptors that may be impacted by the spill.

2.6 Disposal of Recovered Product and Contaminated Response Material

The PRSP shall be responsible for the disposal of contaminated materials classified as hazardous waste in accordance with applicable solid and hazardous waste regulations as follows:

Completed	Actions
	Place any recovered product that can be recycled into a tank to be separated and recycled.
	Dispose of recovered product not suitable for on-site recycling with the rest of the waste collected during the response efforts.
	Collect all debris in properly labeled waste containers (impervious bags, drums, or buckets).
	Dispose of contaminated material in accordance with all applicable solid and hazardous waste regulations using a licensed waste hauler and disposal facility, after appropriately characterizing the material for collection and disposal.
	Dispose of all contaminated response material within 2 weeks of the discharge.

2.7 Termination

The PRSP shall be responsible for verifying cleanup has been completed and the contaminated area has been treated or mitigated according to the applicable regulations and state and federal cleanup action levels. If necessary, the PRSP shall collaborate with the local, state and federal authorities regarding the assessment of damages.

Completed	Actions
	Ensure that all repairs to the defective equipment or flowline section have been completed.
	Review circumstances that led to the discharge and take all necessary precautions to prevent a recurrence.
	Evaluate the effectiveness of the response activities and make adjustments as necessary to response procedures and personnel training.
	Carry out personnel and contractor debriefings as necessary to emphasize prevention measures or to communicate changes in operations or response procedures.
	Submit any required follow-up reports to the authorities.

2.8 Discharge Notification

Phone numbers for reporting a discharge to the National Response Center and other federal, state, and local authorities are provided in Section 4.0 of this plan *Any discharge to water must be reported immediately to the NRC.*

The discharge is subject to 40 CFR Part 112 and the PRSP is responsible for ensuring that all pertinent information is provided to the EPA Regional Administrator if the discharge qualifies under the following:

- Violates applicable water quality standards;
- Causes a film, sheen or discoloration upon the surface of navigable waters (e.g., a wash, creek or stream) or adjoining shorelines; or
- Causes a sludge or emulsion to be deposited beneath the surface of navigable waters or upon adjoining shorelines.

If the discharge qualifies under the following:

- (a) Facility has discharged more than 1,000 U.S. gallons of oil in a single discharge;
- (b) Discharged more than 42 U.S. gallons of oil in each of two discharges occurring within any twelve-month period, the facility becomes subject to this section:

POCO must submit the following information to the Regional Administrator within 60 days from the time of the discharge(s):

- (a) Name of the facility;
- (b) Facility Manager/Operator name;
- (c) Location of the facility;
- (d) Maximum storage or handling capacity of the facility and normal daily throughput;
- (e) Corrective action and countermeasures Facility Manager/Operator have taken, including a description of equipment repairs and replacements;
- (f) An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;
- (g) The cause of discharge, including a failure analysis of the system or subsystem in which the failure occurred;
- (h) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and
- (i) Such other information as the Regional Administrator may reasonably require pertinent to the discharge.

3.0 Response Resources and Preparedness Activities

POCO shall familiarize employees and contractors with area landowners, surrounding water bodies, layout for the facility, and response procedures. Equipment used for discharge control shall be available for use. Communication systems shall be established and documented for notification requirements in case of discharge.

3.1 Equipment, Supplies, Services, and Manpower

POCO employees, pumpers and contractors shall be supplied with shovels and absorbent material sufficient to respond to minor discharges occurring at the facility. These personnel are trained and available to respond to a minor oil discharge and shall be familiar with the layout of the facility, the location of spill response equipment and response strategies, and with the POCO Consolidated SPCC and Site Safety and Emergency Spill Response Plans for the facility.

In the event that a significant spill occurs which cannot be mitigated by the pumpers, Freedom Drilling Services shall be contacted (see Section 4.0 of this plan or Section 3.0 of the Site Safety and Emergency Response Plan). Freedom Drilling Services has approximately 20 employees to dispatch in the event of an emergency and a large inventory of spill response equipment available, including but not limited to:

Quantity	Equipment Type	Make & Model
5	Hydrovacs	Vector
6	Industrial Washer units	Hotsys w/ 550-gal capacity
2	Road Graders	John Deere 672G
4	Backhoe	CAT 450
4	Skid Steers	John Deere 3333G
4+	End Dumps	Tractor powered, various

3.2 Access to Receiving Water Body

The PRSP, pumpers, and contractors shall be familiar with the area receiving water bodies, lease and two track roads in the area of operations. If necessary, prior to the deployment of response equipment, the PRSP shall contact local landowners to inform them of response activities being carried out.

3.3 Communications and Control

In the event of a major discharge, a field communication system shall be set up to facilitate response activities. The field communication system shall incorporate mobile phones, and in the event emergency personnel are involved, hand-held radio devices may be necessary.

Generally, the PRSP is responsible for communicating the status of the response operations and for sharing relevant information with involved parties, including local, state, federal, and tribal authorities. In the event that local response agencies, or a federal On-Site Coordinator (OSC) assumes Incident Command, the PRSP shall function as the POCO representative.

3.4 Training Exercises and Updating Procedures

POCO shall establish and maintain an ongoing training program for company personnel responding to oil discharges to communicate the proper response actions, roles, and responsibilities. In addition, POCO shall make available to these personnel the necessary equipment for responding to either a minor or major discharge. The training program is outlined in Section 8.0 of the POCO Consolidated SPCC Plan, and the PRSP

shall be responsible for implementation and evaluation of the employee preparedness training. Following a response to an oil discharge, the PRSP shall perform the following duties to evaluate the actions taken and identify procedural areas where improvements are needed:

- (a) Conduct a briefing with field personnel, contractors, and local emergency responders to discuss lessons learned; and
- (b) Integrate in subsequent SPCC briefings and employee training seminars the outcome of the spill response.

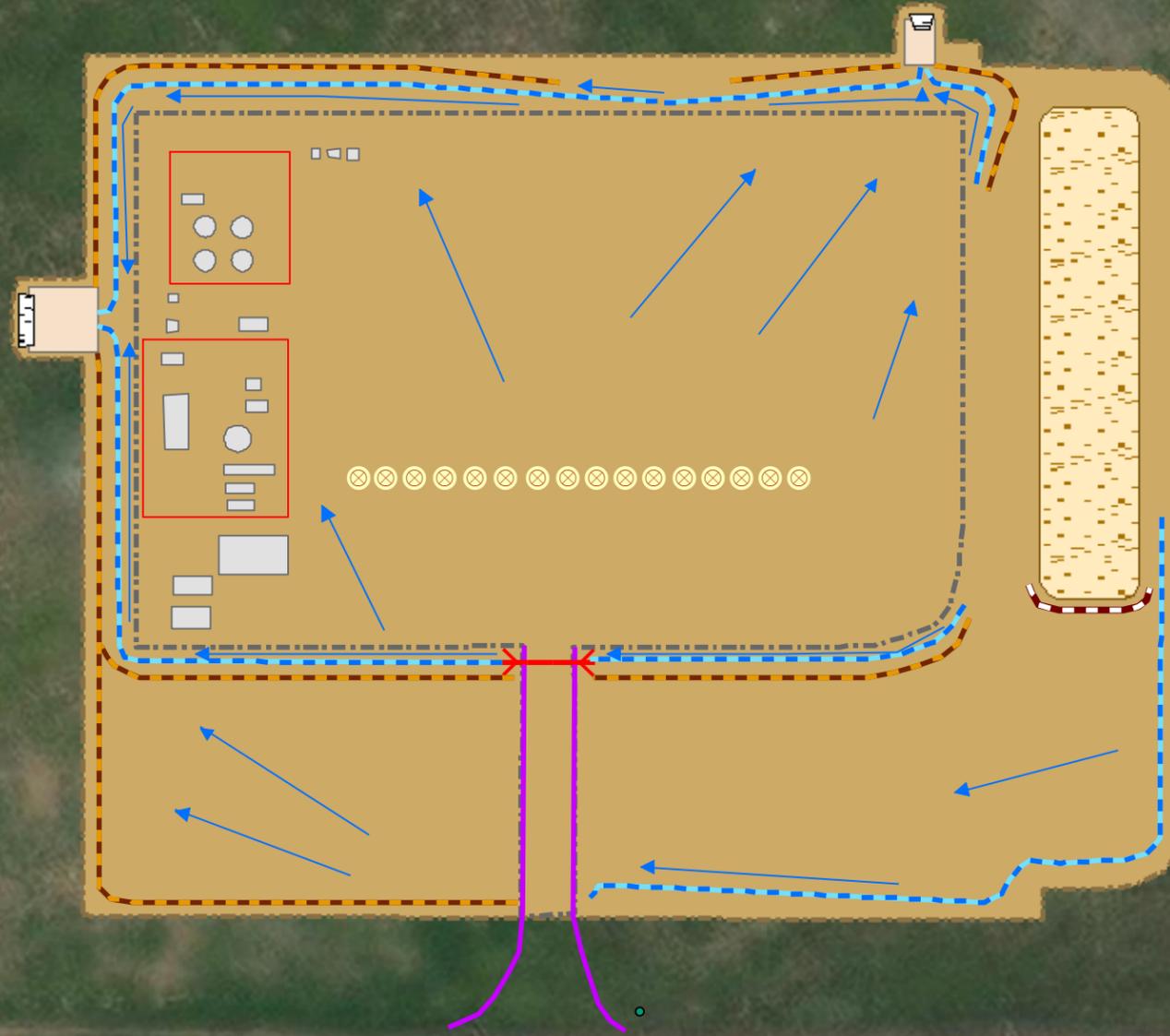
As necessary, the PRSP shall amend this Emergency Spill Response Plan and/or the POCO Consolidated SPCC Plan to reflect changes made to each facility's equipment and operational and spill response procedures. A Professional Engineer shall certify any technical amendment to the Consolidated SPCC Plan.

4.0 DISCHARGE CONTACT LIST

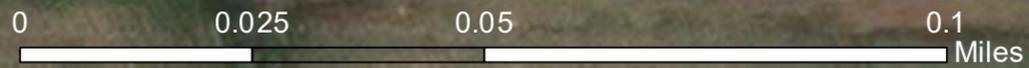
Upon discovery of a spill and after the immediate discharge response procedures outlined in Section 5.0 have been completed, the discharge should be reported to the appropriate personnel and agencies by the Person Responsible for Spill Prevention. If unable to reach the Person Responsible for Spill Prevention, report the spill to listed contact at POCO or alternate.

Contact Entity	Contact	Phone #	Circumstances	When-to-Notify
Person Responsible for Spill Prevention				
Providence Operating DBA POCO Operating	Devin Brown (PRSP)	720-678-9349 (o) 303-349-0302 (m)	Any discharge event, injury, fire	Immediately
Emergency Response Contact List				
Emergency Response	NA	911	Fire or injured personnel	Immediately
Federal Discharge Contact List				
National Response Center	NA	1-800-424-8802	Discharge reaching or threatening navigable waters	Immediately
EPA Region VIII	NA	1-800-227-8917	Discharge of 1,000 gallon or 2nd event of 42 gallon in navigable waters	Written Notification within 60 days (EPA Region VIII Regional Administrator)
Colorado Discharge Contact List				
COGCC	N/A	303-894-2100	Spill of exploration or production wastes > 20 bbls on state or private land	Within 24-Hours
CPDHE	24-Hour Spill Reporting Line	1-877-518-5608	Spills of any size that impact or threaten to impact waters of the state	Immediately following discovery
Adams County LEPC	N/A	720-523-6602	Any spills that require notification as discussed above	As soon as possible
Oil Spill Removal Organization				
Freedom Drilling Services	Freedom Drilling Services	970-673-8465 (o)	When assistance is needed with controlling and/or cleaning up a spill.	When it is determined that such assistance is needed.

APPENDIX A – Figures



E. 136th Street



MAP FEATURES

	Production Pad Surface		Secondary Containment		Sediment Control Log
	Disturbed Area		Rip Rap/Effluent of Sediment Trap		Culvert
	Proposed Production Equipment		Access Road		Surface Flow Direction
	Sediment Trap		Earthen Berm		Well Head Surface Location
	Topsoil Stockpile		Drainage Ditch		

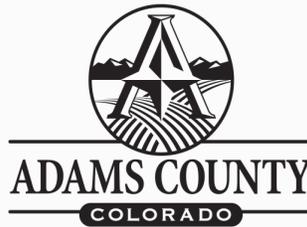
MAP NOTES

Wakeman 20-17 Well Pad Coordinates (WGS 1984)
39.944060 / -104.685530

REVISION	DATE	POCO Operating, LLC.	
Initial Release	10/18/22	Wakeman 20-17 Site Specific Diagram Emergency Spill Response Plan Section 20, Township 1S, Range 65W Adams County	
5545 W. 56th Ave Unit E Arvada, CO 80002 (303) 289-7520 www.aquionix.com		DESIGNED BY: Aquionix	SCALE: 1:1,250
		DATE DRAWN: 10/18/2022	COORD. SYSTEM: WGS_1984 _Web_Mercator_Auxiliary_Sphere
		DRAWN BY: KT	

Y:\POCO Operating-3710\mxd\Wakeman 20-17

Community & Economic
Development Department
adcogov.org



4430 South Adams County Parkway
1st Floor, Suite W2000B
Brighton, CO 80601-8218
PHONE 720.523.6800
EMAIL epermitcenter@adcogov.org

Request for Comments

Case Name: Wakeman Pad at Powhaton
Case Number: OGF2024-00001

January 8, 2024

The Adams County Community & Economic Development Department is requesting comments on the following application: **Oil and Gas Facility (OGF) Permit to allow 16 wells on 7.8 acres in the Agricultural-3 zone district including the Airport Noise and Airport Height Overlay Districts.** This request is located at 13721 Powhaton Rd. The Assessor's Parcel Number is 0156720400003. The applicant is Providence Energy d.b.a POCO Operating / Upstream Petroleum Management, Andrea Gross, 6494 S. Quebec St., Englewood, CO 80111.

Please forward any written comments on this application to the Community and Economic Development Department at 4430 South Adams County Parkway, Suite W2000A Brighton, CO 80601-8216 or call (720) 523-6800 by 02/05/2024 in order that your comments may be taken into consideration in the review of this case. If you would like your comments included verbatim please send your response by way of e-mail to GDean@adcogov.org.

Once comments have been received and the staff report written, the staff report and notice of public hearing dates may be forwarded to you upon request. The full text of the proposed request and additional colored maps can be obtained by contacting this office or by accessing the Adams County web site at www.adcogov.org/current-land-use-cases.

Thank you for your review of this case.

Gregory Dean
Oil & Gas Administrator

BOARD OF COUNTY COMMISSIONERS

Eva J. Henry
DISTRICT 1

Charles "Chaz" Tedesco
DISTRICT 2

Emma Pinter
DISTRICT 3

Steve O'Dorisio
DISTRICT 4

Lynn Baca
DISTRICT 5

Providence Operating LLC DBA POCO Operating
Wakeman Wellpad
Section 20, Township 1 South Range 65 West (SW/4 SE/4) Adams
County, Colorado
Surface: Fee, Mineral Lease: Fee

Written Explanation

The proposed project consists of the construction of one (1) wellpad with up to sixteen (16) wells and one (1) access road for an oil and gas location to be operated by Providence Operating LLC DBA POCO Operating (POCO Operating) POCO Operating does not intend to drill all 16 wells consecutively. The drilling schedule is subject to change due to economic conditions, business development priorities and equipment availability.

Sequence of Major Activities and Estimated Completion Date

Access Road and Wellpad:

Phase I-Pre-Drilling (14 - 21 days)

The existing access road will be upgraded and graveled to crown/ditch standards. Ripping and dozing will be done on the contour to prevent erosion while improving the road. There will be minimal traffic to the location during construction. Pad construction will be done simultaneously with road construction. The drilling rig will be moved onto the pad over the bladed road and drilling will begin. The private surface owner or good engineering practices (i.e. if a culvert is needed for drainage to prevent washout) will stipulate whether culverts will be installed at this point. A silt fence and/or ditch with catch ponds, and/or straw bales/waddles will surround the wellpad area during the drilling operations to prevent erosion. Site conditions may dictate alternate erosion control measures which will be chosen appropriately for current on-the-ground conditions. The access road will be graveled concurrently with wellpad completion.

Phase II-Drilling and Completion (Drilling: 7 – 12 days per well, Completion: 5 – 10 days per well)

After the drilling rig is moved out a truck mounted service rig will be moved in for well completion activities. Any additional operations including well stimulation will be performed at this point.

Final drainage design as designated or approved by the private surface owner will be implemented. Culverts, low water crossings, equipment installation, etc., will be done during this phase.

Phase III-Production

Well completion activities will be finished by this point and the well may be put online. Phase III can extend upwards of 40 years. There will be minimal vehicle traffic; 1-2 light trucks per day may travel the road to check well and maintenance. Depending on liquid production, a tanker truck may come to the site once every 1-30 days. Periodic downhole maintenance and repair will be done on an as needed basis.

Wellpad:

The proposed wellsite is anticipated to be 7.8 acres. Wellpad construction will commence approximately two (2) to five (5) weeks prior to the commencement of drilling operations. The size of location will have an interim reclamation size of 5.79 acres during the production phase.

Production facilities may vary according to the actual reservoir discovered and will be engineered upon completion of well tests. Production facilities will be clustered and placed away from cut/fill slopes to allow maximum recontouring of cut/fill slopes.

SITE EQUIPMENT LIST

Indicate the number and type of major equipment components planned for use on this Oil and Gas Location:

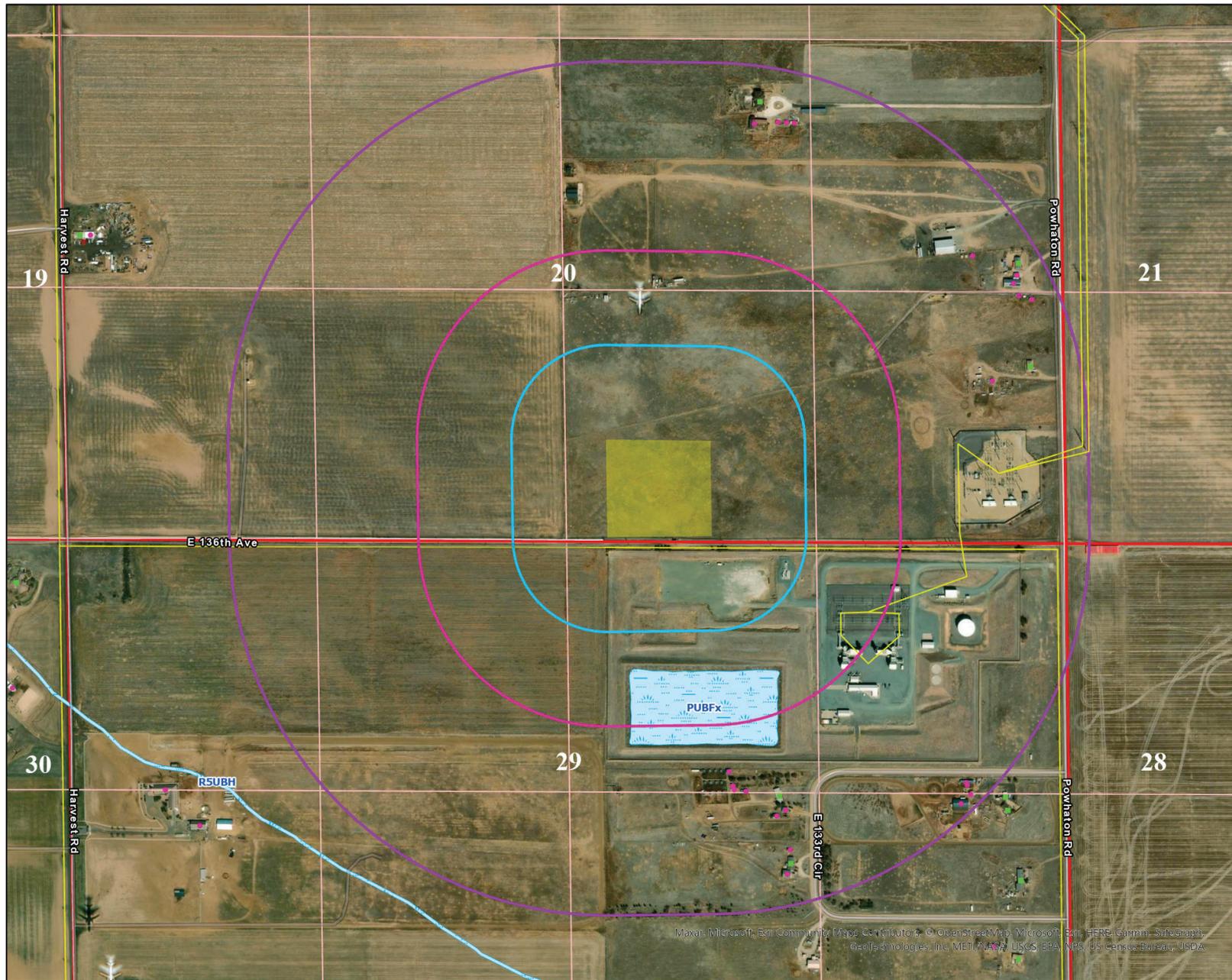
Wells	16	Oil Tanks	2	Condensate Tanks	0	Water Tanks	2	Buried Produced Water Vaults	0
Drilling Pits	0	Production Pits	0	Special Purpose Pits	0	Multi-Well Pits	0	Modular Large Volume Tank	2
Pump Jacks	0	Separators	3	Injection Pumps	0	Heater-Treaters	1	Gas Compressors	1
Gas or Diesel Motors	0	Electric Motors	1	Electric Generators	0	Fuel Tanks	0	LACT Unit	1
Dehydrator Units	0	Vapor Recovery Unit	2	VOC Combustor	3	Flare	0	Enclosed Combustion Devices	0
Meter/Sales Building	0	Pigging Station	0			Vapor Recovery Towers	0		

OTHER PERMANENT EQUIPMENT

Permanent Equipment Type	Number
Electrical Switch Rack	1
Water Truck Out	1
Fuel Gas Accumulator	1
Oil Truck Out	1
Surge Vessel	1
Rio Panel	1
Combuster Knockout	1
Transformer	1
67 Gallon Sump Box	1
Instrument Air	1
Riser Area	1
Recirculating Pump	1
Sales Gas Metering	1
Fuel Gas Scrubber	2

OTHER TEMPORARY EQUIPMENT

Temporary Equipment Type	Number
Closed Flowback Tank	3
4 Phase flowback Separator	1
Liquid & Solids Separator	1
Combuster	1
3 sided Open Top Bin	1



Legend

- Proposed Location
- 2,000 Foot Buffer
- 1,000 Foot Buffer
- 500 Foot Buffer
- Roads
- Overhead Power Line
- Commercial Building Unit
- Mobile Home
- Out Building
- Residential Building Unit
- Wetlands

Cultural Feature	From Edge of Working Pad Surface
Building	South 1,249'
Residential Building Unit	South 1,421'
High Occupancy Building Unit	North > 5,280'
Designated Outdoor Activity Area	West > 5,280'
Public Road (E 136th Ave)	SW 28'
Above Ground Utility	South 58'
Railroad	NW > 5,280'
Property Line	South 23'
School Facility	NW > 5,280'
Child Care Facility	NW > 5,280'
Pisproportionately Impacted Community Boundary	South > 5,280'
Municipality Boundary	South > 5,280'
County Boundary	South > 5,280'
Wetlands	South 711'
Surface Water	South 711'
Public Water System Supply Well	SW > 5,280'
High Priority Habitat	SE > 5,280'

Cultural Feature	# Within 500'	# Within 1,000'	# Within 2,000'
Commercial Building Units	0	0	0
Residential Building Units	0	0	5
High Occupancy Building Units	0	0	0
School Properties	0	0	0
School Facility	0	0	0
Designated Outdoor Activity Area	0	0	0

Note: All GIS data is from publicly available sources and has not been field verified. The data shown on the map is the best available and actual conditions may differ from what is depicted.

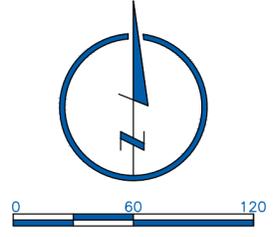
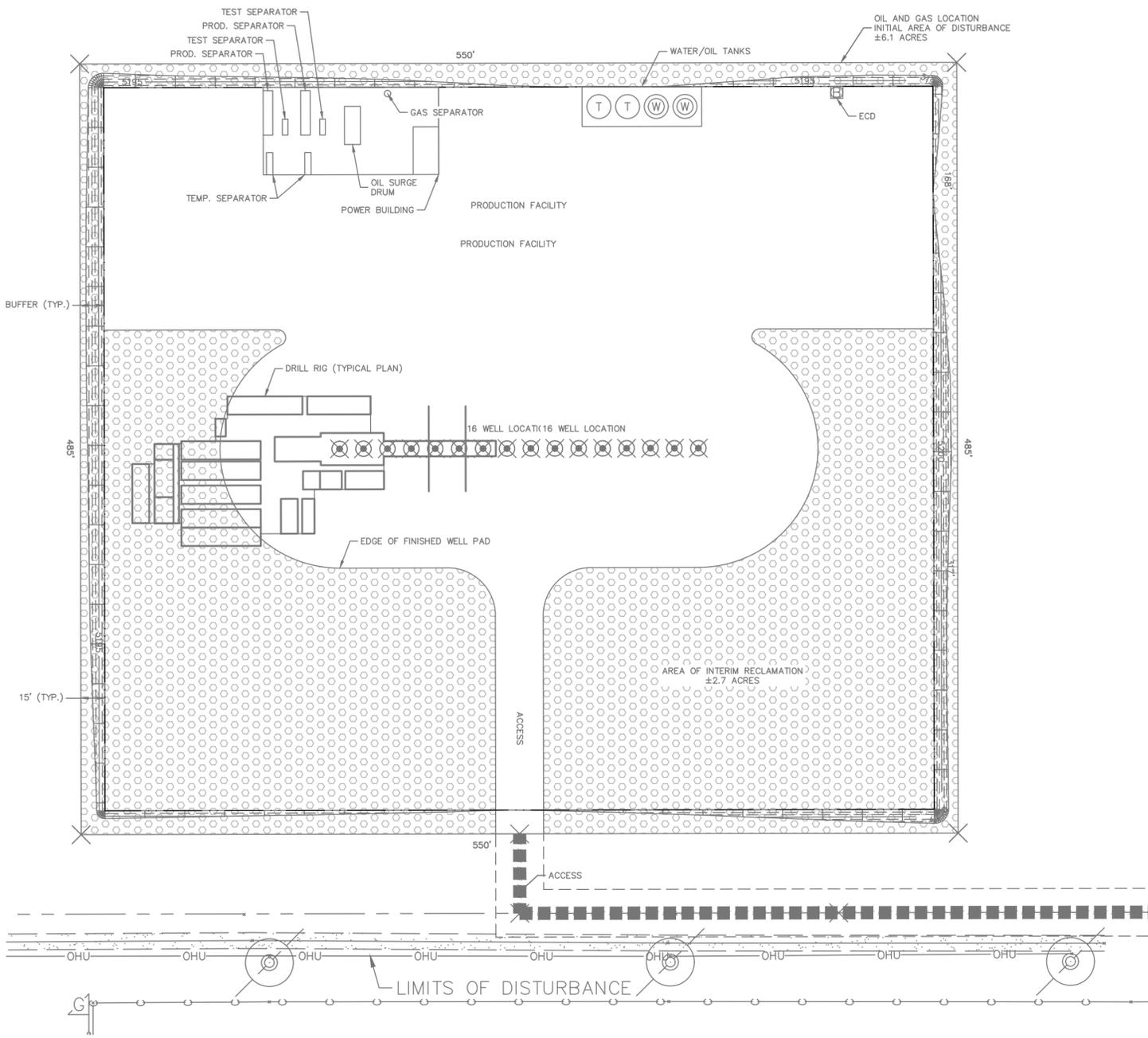
N

0 0.1 0.2 Miles


POCO Operating
WAKEMAN PAD
 SW 1/4 SE 1/4, SECTION 20, T1S R65W
 ADAMS COUNTY, CO
ALTERNATIVE LOCATION ANALYSIS RULE 304.b
PROPOSED LOCATION: MAP 4 of 7

Prepared by: 

L:\Engineering\0218023.04 PS - Wakeman 20-17\DRAWINGS\CONSTRUCTION DRAWINGS\0218023.04 LS-01.dwg, 6/22/2018 8:43:51 AM, SAM CHRISTENSEN, LAMP RYNEARSON & ASSOCIATES



NATIVE GRASS SEED MIX:

CODE	BOTANICAL NAME	COMMON NAME	% OF MIX (PLS LBS)
	PASCOPYRUM SMITHII	WESTERN WHEATGRASS	30%
	ACHANTHERUM HYMENOIDES	INDIAN RICEGRASS	30%
	ELYMUS TRACHYCAUIUS	SLENDER WHEATGRASS	20%
	SPOROBOLUS CRYPTANRUS	SAND DROPSEED	20%

SEED MIX NOTES

- SEED SHALL BE FURNISHED IN BAGS OR CONTAINERS CLEARLY LABELED TO SHOW THE NAME AND ADDRESS OF THE SUPPLIER, THE SEED NAME, THE LOT NUMBER, NET WEIGHT, THE PERCENT OF WEED SEED CONTENT AND THE GUARANTEED PERCENTAGE OF PURITY AND GERMINATION.
- THE CONTRACTOR SHALL SUBMIT TO THE PROJECT REPRESENTATIVE A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED WITHIN SIX MONTHS PRIOR TO THE DATE OF DELIVERY. SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE.
- SEED AND SEED LABELS SHALL CONFORM TO ALL CURRENT STATE AND FEDERAL REGULATIONS AND WILL BE SUBJECT TO THE TESTING PROVISIONS OF THE ASSOCIATION OF OFFICIAL SEE ANALYSIS.
- COMPUTATIONS FOR QUANTITY OF SEED REQUIRED ARE BASED ON THE PERCENT OF PURITY AND PERCENT OF GERMINATION: POUNDS OF SEED X PURITY X GERMINATION = POUNDS OF PURE LIVE SEED (PLS).
- SITE PREPARATION FOR BAREGROUND SEEDING:
 - CONDUCT A SOIL TEST, PER ACRE, TO DETERMINE ANY NEEDED SOIL AMENDMENTS. IDEAL SOIL PH IS BETWEEN 6.0 AND 7.0.
 - REMOVE ALL EXISTING VEGETATION, SPRAY SEED AREA WITH NON-SELECTIVE HERBICIDE, REMOVE DEAD VEGETATION AND LARGE DEBRIS.
 - ADD SOIL AMENDMENTS AS NECESSARY TO ADJUST SOIL PH LEVELS AND TILL SOIL TO A 4" - 6" DEPTH. PULVERIZE AND LIGHTLY ROLL SOIL.
 - APPLY 1 LB OF PHOSPHOROUS(P) (2.27 LBS P205)/1000 SQ.FT. TO SOIL SURFACE.
- SEEDING METHODS, BASED ON THE SLOPE AND SOIL AT SITE. USE BROADCAST, DROP, SLIT OR DRILL SEEDING METHODS WHERE EROSION IS NOT A CONCERN.
 - DRILL SEEDING = 25LBS PER ACRE AND BROADCAST SEEDING = 37.5 LBS PER ACRE
 - SEED SHOULD BE PLANTED .125 TO .25 INCHES BELOW SOIL SURFACE, IN TWO DIRECTIONS PUTTING 1/2 OF THE SEED DOWN EACH DIRECTION. SEEDED AREAS SHOULD BE GENTLY ROLLED OR RAKED TO ENSURE GOOD SOIL TO SEED CONTACT.
- WATERING REQUIREMENTS:
 - WATER TO FIELD CAPACITY IMMEDIATELY AFTER SEEDING.
 - WEEK 1 - 3 AFTER SEEDING SOIL SHALL BE MOIST TO 1 INCH DEPTH.
 - WEEKS 4-6 AFTER SEEDING AREA SHALL BE WATERED 3-4 TIMES PER WEEK.
 - AFTER 6 WEEKS GRASS SHALL ONLY NEED WATER WHEN IT BEGINS TO SHOW DROUGHT STRESS.
- FERTILIZE SEEDED AREA ONCE FOR THE FIRST TWO MONTHS WITH .5 LBS OF N/1000 SQ.FT. AFTER SEEDING.
- MOW WHEN THE GRASS IS ONE INCH LONGER THAN DESIRED HEIGHT. DO NOT REMOVE MORE THAN 1/3 OR GRASS BLADE.

DRAWN BY	SJC
DESIGNED BY	SJC
DATE	6-22-2018
JOB NUMBER-TASKS	0218023.04
BOOK AND PAGE	

REVISIONS	###	###	###	###	###
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LAMP RYNEARSON & ASSOCIATES
 14710 West Dodge Road, Suite 100 | 402.496.2498 | P
 Omaha, Nebraska 68154-2027 | 402.496.2730 | F
 www.LRA-inc.com

WAKEMAN 20-17 PAD
COUNTY OF ADAMS, CO

LANDSCAPE PLAN

###
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SHEET	1	OF	1
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811
 Know what's below.
 Call before you dig.

ALL UTILITIES ARE SHOWN BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.