

State of Colorado Oil and Gas Conservation Commission

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Document Number: 401032560			
Date Received: 04/25/2016			

SUNDRY NOTICE

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: <u>10531</u>	Contact Name <u>Crissy Venturo</u>	Complete the Attachment Checklist OP OGCC
Name of Operator: <u>VANGUARD OPERATING LLC</u>	Phone: <u>(720) 352-7916</u>	
Address: <u>5847 SAN FELIPE #3000</u>	Fax: <u>()</u>	
City: <u>HOUSTON</u> State: <u>TX</u> Zip: <u>77057</u> Email: <u>cventuro@progressivepcs.net</u>		
API Number : <u>05-04500</u> OGCC Facility ID Number: <u>424213</u>	Survey Plat	
Well/Facility Name: <u>Miller Pad #9</u> Well/Facility Number: <u>13A-6-791</u>	Directional Survey	
Location QtrQtr: <u>Lot 4</u> Section: <u>6</u> Township: <u>7S</u> Range: <u>91W</u> Meridian: <u>6</u>	Srvc Eqpmt Diagram	
County: <u>GARFIELD</u> Field Name: <u>MAMM CREEK</u>	Technical Info Page	
Federal, Indian or State Lease Number: <u></u>	Other	

CHANGE OF LOCATION OR AS BUILT GPS REPORT

☐ Change of Location * ☐ As-Built GPS Location Report ☐ As-Built GPS Location Report with Survey

* Well location change requires new plat. A substantive surface location change may require new Form 2A.

SURFACE LOCATION GPS DATA Data must be provided for Change of Surface Location and As Built Reports.

Latitude PDOP Reading Date of Measurement
Longitude GPS Instrument Operator's Name

LOCATION CHANGE (all measurements in Feet)

Well will be: (Vertical, Directional, Horizontal)

Change of **Surface** Footage **From** Exterior Section Lines:

Change of **Surface** Footage **To** Exterior Section Lines:

Current **Surface** Location **From** QtrQtr Lot 4 Sec 6

New **Surface** Location **To** QtrQtr Sec

Change of **Top of Productive Zone** Footage **From** Exterior Section Lines:

Change of **Top of Productive Zone** Footage **To** Exterior Section Lines:

Current **Top of Productive Zone** Location **From** Sec

New **Top of Productive Zone** Location **To** Sec

Change of **Bottomhole** Footage **From** Exterior Section Lines:

Change of **Bottomhole** Footage **To** Exterior Section Lines:

Current **Bottomhole** Location Sec Twp

New **Bottomhole** Location Sec Twp

Is location in High Density Area?

Distance, in feet, to nearest building , public road: , above ground utility: , railroad: ,

property line: , lease line: , well in same formation:

Ground Elevation feet Surface owner consultation date

FNL/FSL		FEL/FWL	
<u>564</u>	<u>FNL</u>	<u>369</u>	<u>FWL</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
Twp <u>7S</u>	Range <u>91W</u>	Meridian <u>6</u>	
Twp <u> </u>	Range <u> </u>	Meridian <u> </u>	
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Twp <u> </u>	Range <u> </u>		
Twp <u> </u>	Range <u> </u>		
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Range <u> </u>			
Range <u> </u>			

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** attach deviated drilling plan

OTHER CHANGES

☐ **REMOVE FROM SURFACE BOND** Signed surface use agreement is a required attachment

☐ **CHANGE OF WELL, FACILITY OR OIL & GAS LOCATION NAME OR NUMBER**

From: Name MILLER PAD #9 Number 13A-6-791 Effective Date: _____

To: Name _____ Number _____

☐ **ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.**

☐ WELL: Abandon Application for Permit-to-Drill (Form2) – Well API Number _____ has not been drilled.

☐ PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number _____ has not been constructed (Permitted and constructed pit requires closure per Rule 905)

☐ CENTRALIZED E&P WASTE MANAGEMENT FACILITY: Abandon Centralized E&P Waste Management Facility Permit (Form 28) – Facility ID Number _____ has not been constructed (Constructed facility requires closure per Rule 908)

OIL & GAS LOCATION ID Number: _____

☐ Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

☐ Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

☐ **REQUEST FOR CONFIDENTIAL STATUS**

☐ **DIGITAL WELL LOG UPLOAD**

☒ **DOCUMENTS SUBMITTED** Purpose of Submission: Removal of Completion Pit

RECLAMATION

INTERIM RECLAMATION

☐ Interim Reclamation will commence approximately _____

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

Field inspection will be conducted to document Rule 1003.e. compliance

FINAL RECLAMATION

☐ Final Reclamation will commence approximately _____

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned _____ Has Production Equipment been removed from site? _____

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT _____

☐ SPUD DATE: _____

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

Details of work must be described in full in the COMMENTS below or provided as an attachment.

☐ NOTICE OF INTENT Approximate Start Date _____

☐ REPORT OF WORK DONE Date Work Completed _____

- | | | |
|--|---|--|
| <input type="checkbox"/> Intent to Recomplete (Form 2 also required) | <input type="checkbox"/> Request to Vent or Flare | <input type="checkbox"/> E&P Waste Mangement Plan |
| <input type="checkbox"/> Change Drilling Plan | <input type="checkbox"/> Repair Well | <input type="checkbox"/> Beneficial Reuse of E&P Waste |
| <input type="checkbox"/> Gross Interval Change | <input type="checkbox"/> Rule 502 variance requested. Must provide detailed info regarding request. | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases | |

COMMENTS:

H2S REPORTING

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: _____ in ppm (parts per million) Date of Measurement or Sample Collection _____

Description of Sample Point:

Absolute Open Flow Potential _____ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: _____

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: _____

COMMENTS:

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	<ul style="list-style-type: none"> • Rule 604.c.(2).E. Multi-Well Pads: The oil and gas location includes 8 proposed wells. No suitable existing locations are in the area. • Rule 604.c.(2).Q. Guy Line Anchors: Should guy line anchors be left buried for future use, they will be identified by a bright marker greater than four (4) feet high and no more than one (1) foot east of the guy line anchor. • Rule 604.c.(2).R. Tank Specifications: Condensate storage tanks will be designed, constructed, and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). Vanguard will maintain written records to verify proper design, construction, and maintenance. All records will be available for inspection by Director. • Rule 604.c.(2).S. Access Roads: Roads will be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed to BLM Gold Book standards. Initial gravel application will be a minimum of 6 inches. Vanguard will provide timely year-round road maintenance and cleanup on the access roads. A regular schedule for maintenance will include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement. Roads will be properly constructed and maintained to accommodate for local emergency vehicle access. • Rule 604.c.(2).V. Development From Existing Well Pads: An existing pad was not available to utilize to develop these wells and their BHLs.
2	Community Outreach and Notification	<ul style="list-style-type: none"> • Rule 305.a.(2) Notice of Intent to Conduct Operations: Notice of Intent to conduct operations was sent to each building unit owner within the Buffer Zone Setback. Recipients did not contact Vanguard. Proper notifications required by COGCC regulations or policy memos will be adhered to.
3	Traffic control	<ul style="list-style-type: none"> • Rule 604.c.(2).D. Traffic Plan: Site specific traffic control plans were not required by the county or BLM. Install approved MUTCD traffic control/warning devices before work begins and through the duration of drilling and completion. Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. Pipelines are proposed and include a gas line and two water lines. Water line infrastructure will assist to reduce traffic.
4	General Housekeeping	<ul style="list-style-type: none"> • Rule 604.c.(2).O. Loadlines: All loadlines will be bullplugged or capped. • Rule 604.c.(2).P. Removal of Surface Trash: All employees are trained in spill response, good housekeeping, material management practices, and procedures for equipment and container washing annually. Trash would be contained in a trash cage and hauled away to an approved disposal after the completion of drilling operations. • Rule 804. Visual Impact Mitigation: All facilities to be painted Shadow Gray (or appropriate/BLM recommended color) to blend into the natural vertical elements. Downcasting lights will be installed on permanent facilities.

5	Wildlife	<ul style="list-style-type: none"> • Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. Install exclusionary device to prevent bird and other wildlife access to equipment stacks, vents and openings. • Establish policies to protect wildlife (e.g. no firearms, no dogs on location, no feeding of wildlife, etc.) • Promptly report spills that could affect wildlife to the Water Quality Control Division of CDPHE and CDOW • Avoid location staging, refueling, and storage areas within 300 feet, of any reservoir, lake, wetland, or natural perennial or seasonal flowing stream or river. <p>INFRASTRUCTURE LAYOUT WILDLIFE PROTECTION MEASURES</p> <ul style="list-style-type: none"> • Implementing fugitive dust control measures • Limit parking to disturbed areas as much as possible <p>DRILLING AND PRODUCTION OPERATION WILDLIFE PROTECTION MEASURES</p> <ul style="list-style-type: none"> • Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. • Exclusionary device to prevent birds and other wildlife access to equipment stacks, vents and openings. • Establish company guidelines to minimize wildlife mortality from vehicle collision on roads. <p>INVASIVE/NON-NATIVE VEGETATION CONTROL</p> <ul style="list-style-type: none"> • Educate employees and contractors about noxious and invasive weed issues. <p>RESTORATION, RECLAMATION AND ABANDONMENT</p> <ul style="list-style-type: none"> • Avoid aggressive non-native grasses and shrubs in mule deer and elk habitat restorations. • Revegetate with seed mixtures that are of the surface owner's preference that are compatible with both livestock and wildlife or BLM approved seed mixes.
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6	Storm Water/Erosion Control	<ul style="list-style-type: none"> • Limit the amount of land disturbed during construction of pad, access road, and facilities. The well pad and access road were designed to minimize erosion. Routine inspections and controls are to be implemented, as necessary. Conduct internal storm water inspections per applicable stormwater regulations. Any excessive precipitation accumulation within containment should be removed as appropriate and disposed of properly. • Utilize diking and other forms of secondary containment around tanks, drums, chemicals, liquids, pits, impoundments, or well pads. • Use drip pans, sumps, or liners where appropriate. • Limit the amount of land disturbed during construction of pad, access road, and facilities • Employ spill response plan (SPCC) for all required facilities. • Properly dispose of any wastes fluids and other materials. <p>MATERIAL HANDLING, ACTIVITIES, PRACTICES AND STORM WATER DIVERSION</p> <ul style="list-style-type: none"> • Secondary containment of tanks, drums, and storage areas is mandatory to prohibit discharges to surface waters. A minimum of 150% capacity required of largest storage tank within a containment area • Material handling, spill prevention procedures and practices will be followed to help prohibit discharges to surface waters. • Proper loading and transportation procedures to be followed for all materials to and from locations <p>EROSION CONTROL</p> <ul style="list-style-type: none"> • Pad and access road to be designed to minimize erosion. • Pad and access road to implement appropriate erosion control devices where necessary to minimize erosion. • Routine inspections of sites and controls to be implemented with additions, repairs, and optimization to occur, as necessary, to minimize erosion. <p>SELF INSPECTION, MAINTENANCE, AND HOUSEKEEPING</p> <ul style="list-style-type: none"> • All employees are trained in spill response, good housekeeping, material management practices, and procedures for equipment and container washing annually. • Conduct internal storm water inspections per applicable stormwater regulations. • Conduct routine informal inspections of all tanks and storage facilities at least weekly • All containment areas are to be inspected weekly or following a heavy rain event. • Any excessive stormwater accumulation within containment should be removed as appropriate and disposed of properly • All structural berms, dikes, and secondary containments will be inspected periodically to ensure they are operating correctly. <p>SPILL RESPONSE</p> <ul style="list-style-type: none"> • Spill response procedures as per the field SPCC Plan. <p>LOCATION PROCEDURES</p> <ul style="list-style-type: none"> • Location to be treated to eliminate weeds and bladed when necessary <p>•CDPHE Stormwater Permit Number: COR-039752</p>
7	Material Handling and Spill Prevention	<ul style="list-style-type: none"> • Rule 604.c.(2).F. Leak Detection Plan: Vanguard maintains a spill response plan (SPCC) for all facilities. Routine informal inspections of all tanks and storage facilities occur daily as part of the production operations. Tank batteries will be placed within engineered, steel secondary containments with an impervious liner system. These secondary containment systems will be sized to account for 150% of the volume of the tank. The use drip pans, sumps, liners or other BMPs will be utilized where appropriate. Vanguard will implement best management practices to contain any unintentional releases and all E&P waste or other materials will be properly disposed of. • Rule 604.c.(2).N. Control of Fire Hazards: Vanguard will ensure that any material that might be deemed a fire hazard will remain no less than twenty-five (25) feet from the wellhead(s), tanks and separator(s). Any electrical equipment installations inside the bermed area will comply with API RP 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.
8	Dust control	<ul style="list-style-type: none"> • 805.c. Dust: During construction and operation, operator will implement dust abatement measures, as needed, to prevent fugitive dust from vehicular traffic, equipment operations, or wind events.

9	Construction	<ul style="list-style-type: none"> • Rule 604.c.(2).G. Berm Construction: Secondary containment will be constructed around crude oil, condensate, and produced water storage tanks and will enclose an area sufficient to contain and provide secondary containment for one-hundred fifty percent (150%) of the largest single tank. Berms or other secondary containment devices will be sufficiently impervious to contain any spilled or released material. All berms and containment devices will be inspected at regular intervals and maintained in good condition. No potential ignition sources will be installed inside the secondary containment area unless the containment area encloses a fired vessel. Temporary frac tanks installed on location will have proper secondary containment according to SPCC regulations such as either putting a perimeter berm around location or around the frac tanks. • Rule 604.c.(2).M. Fencing Requirements: Unless otherwise requested by the Surface Owner, locations will be adequately fenced to restrict access by unauthorized persons. • All topsoil will be stripped and segregated following removal of vegetation during construction of the well pad, access roads and pipelines. Roads will be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed consistent with BLM Gold Book standards. Initial gravel application will be a minimum of 6 inches. Vanguard will provide timely year-round road maintenance on the access roads. A regular schedule for maintenance will include, but not be limited to, blading, ditch and culvert cleaning, gravel replacement, and dust abatement.
10	Noise mitigation	<ul style="list-style-type: none"> • Rule 604.c.(2).A. Noise: Mufflers on the rig will be oriented away from the nearest building unit to minimize engine noise. Plumb dump lines into tanks to muffle sound. Rubber cushions in lubricators are used to muffle sound for plunger lift. Vanguard will adhere to Rule 802 noise abatement.
11	Emissions mitigation	<ul style="list-style-type: none"> • Rule 604.c.(2).C. Green - Completions - Emission Control Systems: A combustor will be installed for control of associated condensate and produced water tank emissions with 95% control efficiency. Green completion practices to be utilized. All green flow back equipment will be able to handle more than 1.5 times the amount of any known volumes in the surrounding field.
12	Odor mitigation	<ul style="list-style-type: none"> • 805.b. Odors: Potential odors associated with the completions process and/or with long term production operations will be controlled/ mitigated.

13	Drilling/Completion Operations	<ul style="list-style-type: none"> • Rule 604.c.(2).B. Closed Loop Drilling Systems - Pit Restrictions: Vanguard will use a closed loop and pitless system for drilling and fluid management. Drill cuttings from the wellbore will be directed into lined and bermed surface containments. Any free liquids accumulated in the containment would be removed as soon as practicable. If the well(s) is(are) to be hydraulically stimulated, flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline or storage vessel located on the well pad; or into tanker trucks for offsite disposal. • Rule 604.c.(2).H. Blowout Preventer Equipment: Vanguard will utilize a rig with a double ram with blind and pipe ram and annular preventer. • Rule 604.c.(2).I. BOPE Testing for Drilling Operations: After installation of the BOPE, Vanguard will conduct a pressure test on the BOPE and will test at a minimum ever 30 days. All tests are documented and any failed equipment or seals are replaced and re-tested. • Rule 604.c.(2).J. BOPE For Well Servicing Operations: Blowout prevention equipment will be used on any servicing operations associated with the well pad. Backup stabbing valves will be used during any future servicing operations during reverse circulation. Valves will be pressure tested before each well servicing operation using low-pressure air and high-pressure fluid. • Rule 604.c.(2).K. Pit Level Indicators: All storage tanks used for active drilling operations (used in lieu of pits) will contain pit level indicators. • Rule 604.c.(2).L. Drill Stem Tests: No drill stem tests are planned and none will be performed without prior approval from the Director. • 803. Lighting: Lightings will be positioned to downcast during drilling/completion activities. • 317.p. Requirement to log well: One of the first wells drilled on the pad will be logged with open-hole Resistivity Log and Gamma Ray Log from TD into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs will clearly state "No open-hole logs were run" and will clearly identify (by API#, well name & number) the well in which open-hole logs were run.
14	Interim Reclamation	<ul style="list-style-type: none"> • Facilities are constructed to maximize reclamation success. All disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations or for subsequent drilling operations to be commenced within twelve (12) months, will be reclaimed as early and as nearly as practicable to their original condition or their final land use as designated by the surface owner. Vanguard will adhere to Rule 1003 and all requirements pertaining to interim reclamation.
15	Final Reclamation	<ul style="list-style-type: none"> • Rule 604.c.(2).T. Well Site Cleared: The wellsite will be cleared of all non-essential equipment within ninety (90) days after all wells associated with the pad have been plugged and abandoned. Vanguard will begin final reclamation activities so that seeding occurs in the optimal growing season. Reclamation is not expected to occur until after the timing limitations end for big game. Vanguard will adhere to Rule 1004 and all requirements pertaining to final reclamation. • Rule 604.c.(2).U. Identification of Plugged and Abandoned Wells: Pursuant to rule 319.a.(5)., once the well has been plugged and abandoned, Vanguard will identify the location of the wellbore with a permanent monument that will detail the well name and date of plugging.

Total: 15 comment(s)

Operator Comments:

Vanguard Operating, LLC (Vanguard) is reporting the revised BMPs per the COGCC's request for the subject location. The BMPs have been updated for the setback location per Rule 604 Mitigation Measures. The attached BMPs are also applicable to Vanguard's planned operations without the use of a completion pit. Please find attached the updated construction layout drawing and WMP.

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Crissy Venturo
Title: Regulatory Analyst Email: cventuro@progressivepcs.net Date: 4/25/2016

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: KUBECZKO, DAVE Date: 9/27/2016

CONDITIONS OF APPROVAL, IF ANY:**COA Type****Description**

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General Comments**User Group****Comment****Comment Date**

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Total: 0 comment(s)

Attachment Check List**Att Doc Num****Name**

401032560	FORM 4 SUBMITTED
401033908	CONST. LAYOUT DRAWINGS
401035682	WASTE MANAGEMENT PLAN

Total Attach: 3 Files