

TECHNICAL REVIEW: AIR PERMIT BY RULE

Permit No.:	156335	Company Name:	Pioneer Water Management LLC	APD Reviewer:	Donna Wurst
Project No.:	309880	Unit Name:	Add Skim Oil Tank and Revise Emissions at the Hutt Clean Brine Facility	PBR No(s).:	106.261, 106.262, 106.263, 106.472, 106.473

GENERAL INFORMATION			
Regulated Entity No.:	RN110744349	Project Type:	Permit by Rule Application
Customer Reference No.:	CN604630772	Date Received by TCEQ:	December 13, 2019
City/County:	Midland, Midland County	Date Received by Reviewer:	December 13, 2019
Physical Location: From intx I20 and TX 158 near Midland go S on FM 715 S 5.4 Mi go L on CR 160 1.0 Mi go R on S CR 1160 for 5.6 Mi go L on dirt rd 1.0 Mi go R on dirt rd to site entrance on L at 0.76 Mi			

CONTACT INFORMATION					
Responsible Official/ Primary Contact Name and Title:	Alan Van Reet Sr. Construction and Operations Manager	Phone No.:	(972) 969-5731	Email:	ALAN.VANREET@PXD.COM
Technical Contact/ Consultant Name and Title:	Kevin Pemberton Senior Environmental Specialist	Phone No.:	(972) 969-5163	Email:	KEVIN.PEMBERTON@PXD.COM

GENERAL RULES CHECK	YES	NO	COMMENTS
Is confidential information included in the application?		X	
Has the PBR fee been paid?	X		Application fee: 443319 / 582EA000368410
Is this registration certified?	X		PI-7-CERT
Is this an APWL site?		X	
Are there any upstream or downstream affects associated with this registration?		X	
Is planned MSS included in the registration?	X		
Are there affected NSR or Title V authorizations for the project?		X	No permits
Is each PBR > 25/250 tpy?		X	
Are PBR sitewide emissions > 25/250 tpy?		X	
Are there permit limits on using PBRs at the site?		X	
Is PSD or Nonattainment netting required?		X	
Do NSPS, NESHAP, or MACT standards apply to this registration?		X	
Does NOx Cap and Trade apply to this registration?		X	
Is the facility in compliance with all other applicable rules and regulations?	X		

DESCRIBE OVERALL PROCESS AT THE SITE
Pioneer Water Management, LLC (Pioneer) owns and operates the Hutt Clean Brine Facility under PBR Reg. #156335. Produced water is gathered from multiple producing tank batteries within the area and is routed to the site via pipeline into a gun barrel where the skim oil is separated from the produced water. The gun barrel is a constant level vessel; therefore, there are no working emissions from the vessel. In addition, the liquids are received at atmospheric conditions; therefore, there are no flash emissions from the gun barrel. Breathing or standing emissions from the vessel are vented to the atmosphere. The water from the gun barrel flows into three produced water tanks to equalize flow and to provide smooth and consistent operation of the water treatment facility. Oil skimmed from the gun barrel is transferred to one 210 bbl and one 500 bbl skim oil tanks which are periodically loaded out via trucks or oil is transferred offsite via pipeline. From the produced water tanks, water is pumped through one 403 bbl open top DAF unit. The DAF unit is equipped with an electric blower with one scfm capacity, diffusers, skimmer, and associated piping and controls for operations. The DAF unit removes solids and separates any remaining oil from the water. Various treatment chemicals are added to the water before entering the DAF unit in a pipe flocculator. Chemicals added in the pipe flocculator include the following: - hydrogen peroxide and sodium metabisulfite to control bacterial growth; - sodium hypochlorite (bleach) for aiding flocculation and controlling bacterial growth; - polymers to aid in solids removal, and - sodium hydroxide, sulfuric acid, and citric acid for pH balance. The scum and settled solids from the DAF unit are routed to the decanting tank where the solids are settled and routed to the wastewater tank and the supernatant liquid is recycled back into the DAF. Clean brine from the DAF are fed into nutshell filters which further filter the solids from the clean brine. A portion of the clean brine is routed to two 500 bbl clearwell tanks which is used periodically for filter cleaning operations. Liquids from the media filtration skids are routed to two 500 bbl UF feed tanks. The liquid is pumped through ultrafiltration skids for further purification and then routed to one 500 bbl open top discharge tank. The treated water is piped offsite.

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DESCRIBE OVERALL PROCESS AT THE SITE

A portion of the treated liquid is routed to one 120 bbl UF backflush tank which is used for periodic UF backflush operations. In addition, one 12 bbl CIP tank is maintained onsite for UF skid backflushing with citric acid and sodium hydroxide.

The media filtration backflush fluid and ultrafiltration skids backflush fluid are routed to the wastewater tank. The wastewater tank is loaded out periodically using tanker trucks or transferred off site via pipeline.

Loading Operations

Skim oil, wastewater, and water from the storage tanks are primarily piped offsite. For operational flexibility, it is assumed that up to 29,751 bbl/yr of skim oil and 1,189,900 bbl/yr of wastewater will be loaded into tanker trucks and trucked off site.

The site is equipped with hydrogen peroxide, sodium metabisulfite, sodium hypochlorite (bleach), polymer, sodium hydroxide, sulfuric acid, citric acid, and CIP tanks. The site will also produce fugitive emissions.

Maintenance, Startup, and Shutdown (MSS)

MSS activities include tank degassing, low-emitting MSS (LEMSS) activities, and blasting and coating operations. LEMSS includes process equipment cleaning, adjustment, parts replacement, and repair.

DESCRIBE PROJECT AND INVOLVED PROCESS

The company submitted a PI-7-CERT to certify the emissions from the addition of a skim oil tank and operational changes at this facility.

TECHNICAL SUMMARY - DESCRIBE HOW THE PROJECT MEETS THE RULES

106.261/262 Compliance Demonstration

- The emission point(s) associated with the facilities or changes to facilities are located at least 100 ft from the nearest off-site receptor.
- The total new or increase emissions will comply with the applicable hourly and annual emission limits as represented in the table below.
- There are no changes to or addition of any pollution abatement equipment.
- Visible emissions to the atmosphere, from any point or fugitive source, do not exceed 5.0% opacity in any six-minute period.
- This registration is not for authorization for construction or to change a facility authorized under another PBR or under standard permit.

106.263 - Routine Maintenance, Start-Up and Shutdown of Facilities, and Temporary Maintenance Facilities

MSS emissions being authorized are those allowed in 106.263 including: Equipment venting/degassing, blasting and coating, and low-emitting MSS. Specific operations and representations are available in the file. Pioneer will comply with the emissions limitations listed in this rule. Pioneer will maintain records for the applicable activities listed in this PBR.

106.472 - Organic and Inorganic Liquid Loading and Unloading

The produced water stored in the produced water storage tanks, clearwell tanks, UF feed tanks, discharge tank, UF backwash tank, and wastewater tank meet the definition of water or wastewater. The sodium hydroxide and sodium hypochlorite storage tanks meet the definition of aqueous caustic solution tanks. Sodium metabisulfite solution meets the definition of an aqueous salt solution. The polymers used in the coagulation process meet the definition of polymer referenced in this rule. Sulfuric acid meets the definition of inorganic acid. Citric acid meets the definition of organic liquid with an initial boiling point of 300 degrees Fahrenheit or greater and is not listed in 40 CFR 261, Appendix VIII. Therefore, the produced water storage tanks, clearwell tanks, UF feed tanks, discharge tank, UF backwash tank, wastewater tank, wastewater loading, sodium hydroxide, sodium hypochlorite, sodium metabisulfite, polymer, sulfuric acid, and citric acid storage tanks will be authorized under this PBR.

106.473 - Organic Liquid Loading and Unloading.

- (1): Uncontrolled emissions are calculated using AP-42 factors and are <25 tpy of VOC.
- (2): The loading rate of the facilities does not exceed 25,000 gallons per day averaged over any consecutive 30-day period.
- (3): The skim oil tanks are <25,000 gallons.
- (4): Material stored in the skim oil storage tanks will have a true vapor pressure <11 psia at maximum temperature. Requirements will be met.
- (5): n/a - The site is not located in an area subject to Chapter 115.
- (6): The material stored in the tanks authorized by this PBR is not listed in 40 CFR 261, Appendix VIII.

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PBR 106.261(2)							
Air Contaminant				Emission Limit		Actual Emissions	
				Lb/hr	Tpy	lb/hr	tpy
Propane				6.00	10.00	0.0027	0.0117
Butanes				6.00	10.00	0.0190	0.0830
PBR 106.262							
Air Contaminant	L	D	K	Emission Limit		Actual Emissions	
	mg/m³	ft		lb/hr	Tpy	lb/hr	tpy
Hydrogen Peroxide	1.4	>3000	8	0.175	0.7665	0.0372	0.0033
Hydrogen Sulfide	1			0.125	0.5475	0.00001	0.0001
Pentanes	350			6.00	5.00	0.0586	0.2566
Hexanes	176			6.00	5.00	0.2416	1.0583
Heptanes	350			6.00	5.00	0.1712	0.7499
Octanes	350			6.00	5.00	0.2113	0.9254
Nonanes	1050			6.00	5.00	0.1837	0.8045
Benzene	3			0.38	1.64	0.0068	0.0300
Toluene	188			6.00	5.00	0.0225	0.0985
Ethylbenzene	434			6.00	5.00	0.0031	0.0136
Xylenes	434			6.00	5.00	0.0243	0.1064
PBR 106.261(3)							
Air Contaminant				Emission Limit		Actual Emissions	
				lb/hr	tpy	lb/hr	Tpy
Decane				1.00	4.38	0.1729	0.7574
Undecane				1.00	4.38	0.1599	0.7003
Dodecane				1.00	4.38	0.1338	0.5862
Tridecane				1.00	4.38	0.1440	0.6308
Tetradecane				1.00	4.38	0.1329	0.5819
Pentadecane				1.00	4.38	0.1156	0.5061
Hexadecane				1.00	4.38	0.1016	0.4452
Heptadecane				1.00	4.38	0.1023	0.4479
Octadecane				1.00	4.38	0.0945	0.4139
Nonadecane				1.00	4.38	0.1065	0.4663
Eicosane				1.00	4.38	0.0898	0.3935
Heneicosane				1.00	4.38	0.0848	0.3713
Docosane				1.00	4.38	0.0840	0.3678
Tricosane				1.00	4.38	0.0657	0.2876
Tetracosane				1.00	4.38	0.0732	0.3204
Pentacosane				1.00	4.38	0.0760	0.3328
Hexacosane				1.00	4.38	0.0556	0.2435
Heptacosane				1.00	4.38	0.0694	0.3041
Octacosane				1.00	4.38	0.0597	0.2615
Nonacosane				1.00	4.38	0.0636	0.2787
triacontane				1.00	4.38	0.0518	0.2267
Hentriacontane				1.00	4.38	0.4162	1.8228
TOTAL VOC EMISSIONS:						3.3984	14.8848

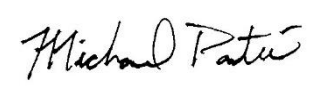
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ESTIMATED EMISSIONS													
EPN / Emission Source	PBR	VOC		H2S		CO		PM/PM ₁₀ /PM _{2.5}		NOx		SO ₂	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Revised													
FUG: Site Fugitives	106.261/262	0.82	3.61	<0.01	<0.01								
TANK1: Skim Oil Tank	106.473	0.12	0.53	<0.01	<0.01								
LOAD1: Skim Oil Loading	106.473	16.95	0.86	0.02	<0.01								
TANK2 - 4: Produced Water Tanks	106.472	<0.01	0.02	<0.01	<0.01								
DAF: Dissolved Air Flotation Unit	106.261/262	2.57	11.26	<0.01	<0.01								
TANK9: Discharge Tank	106.472	0.01	0.05	<0.01	<0.01								
TANK11: Waste Decanting Tank	106.261/262	<0.01	0.02	<0.01	<0.01								
TANK12: Wastewater Tank	106.472	<0.01	0.02	<0.01	<0.01								
LOAD2: Wastewater Loading	106.472	0.02	0.05	<0.01	<0.01								
CHEM-1: Hydrogen Peroxide	106.261/262	0.04	<0.01										
CHEM-4: Polymer	106.472	0.01	<0.01										
TNKDGS: Tank Degassing	106.263	4.23	0.19					0.01	<0.01				
MSS-BC-1: MSS Blasting/Coating	106.263	<0.01	<0.01					2.21	0.02				
LEMSS: Low-emitting MSS	106.263	0.06	0.25					<0.01	<0.01				
Existing/Unchanged													
GUNBARREL: Gun Barrel	106.261/262	<0.01	<0.01	<0.01	<0.01								
TANK5 - 6: Clearwell Tanks	106.472	<0.01	<0.01	<0.01	<0.01								
TANK7 - 8: UF Feed Tanks	106.472	<0.01	<0.01	<0.01	<0.01								
TANK10: UF Backwash Tank	106.472	<0.01	<0.01	<0.01	<0.01								
CHEM-2: Sodium Metabisulfite	106.472	<0.01	<0.01										
CHEM-3: Sodium Hypochlorite	106.472	0.02	<0.01										
CHEM-5: Sodium Hydroxide	106.472	<0.01	<0.01										
CHEM-6: Sulfuric Acid	106.472	<0.01	<0.01										
CHEM-7: Citric Acid	106.472	<0.01	<0.01										
CHEM-8: CIP Tank	106.472	<0.01	<0.01										
New													
TANK13: Skim Oil Tank	106.473	0.31	1.34	<0.01	<0.01								
TOTAL EMISSIONS (TPY):			18.20		<0.01				0.02				
MAXIMUM OPERATING SCHEDULE: Hours/Year = 8760													

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	TECHNICAL REVIEWER	PEER REVIEWER	FINAL REVIEWER
SIGNATURE:			
PRINTED NAME:	Ms. Donna Wurst	Michael Partee	Kristyn Campbell, Manager
DATE:	January 8, 2020	January 8, 2020	January 15, 2020