



Verifying Mine Methane Capture Projects under the California Air Resources Board Compliance Offset Program

2014 U.S. Coal Mine Methane Conference

Pre Conference Workshop – California Air Resources Board (CARB) Mine Methane Capture (MMC) Protocol

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Presented by: Michael Coté, President

Contributors: Zach Eyler and Phillip Cunningham

Overview

- Verification Timing
- ARB Verification Process Overview
- Important MMC Protocol Items
- Eligible Methane Sources
- Monitoring & Metering
- Successful Verifications

ARB Requirements

- Stay on top of ARB timing requirements – can be confusing
 - Offset Project Data Report (OPDR) must be submitted within 4 months of the end of the reporting period (RP)
 - Based on the RP noted on the Listing form (no matter if the RP ends up changing)
 - Verification cannot initiate until the RP is closed
 - Verifier must submit the Notice of Offset Verification Services (NOVS) at least 30 calendar days prior to the start of verification activities
 - OPDR must be submitted prior to the site visit occurring
 - Verifier must submit the verification report and statement to the OPR within 11 months of the end of the RP

ARB Verification Timeline

- Thus far, verifications under ARB have taken longer than under voluntary programs – Why?
 - NOVS submittal – must be 30 calendar days before you can even start the verification
 - The time needed for verification activities (sampling, site visit, etc.) has been similar to voluntary programs, but Verification Report is much more detailed
 - Can last for two months to six months based on how well a project is organized and how many issues arise
 - Under voluntary programs, once the verification was completed, OPOs could expect a review by the program and credits in their account usually within 4 weeks
 - Now, this final step of OPR and ARB review is taking 2-4 months

Verification Process

- Pre-engagement with Offset Project Operator (OPO)
 - Agree on scope, cost, and preliminary schedule
 - Sign verification services agreement
 - Verification body submit NOVS and conflict of interest (COI) form to offset project registry (OPR) and ARB
- Opening meeting
 - Introductions, discuss verification components, finalize schedule
- Risk Assessment
 - Determine the emission sources by rank
 - Focus on emission sources that contribute the greatest percentage of total emission reductions
 - Determine other areas of risk (eligibility, quantification, regulatory compliance, etc.)

Verification Process

- **Site Visit - Specific requirements for site visit in ARB regulation**
 - Physically inspect all sources, sinks and reservoirs included in the project boundary
 - Review data and calculations
 - Review data handling process and procedures
 - Discuss other protocol requirements
 - Review OPDR submitted by OPO
- **Desktop Sampling**
 - Review of majority of data and Protocol required documents
 - Recalculate emission reductions and compare to offset project operator's calculations
- **Issue Findings**
 - Provide a list of corrective actions, additional document requests and clarifications for the OPO to address
 - Non-material items cannot be ignored

Verification Process

- Draft Verification Report / Statement
 - Report describes the entire verification process and how the project has conformed to the applicable requirements
 - ~25-35 pages
 - Statement is a public document listing the total emission reductions and the verification body's opinion
- Closing Meeting
 - Verification body and OPO review final report and statement
 - Provide feedback on recommendations for improvement
- Upload verification documents to the OPR
- Respond to any OPR and/or ARB comments

OPR and ARB Review

- OPR has 45 calendar days to review
 - If OPR denies credit issuance, OPO can appeal within 10 days of decision and provide additional information
 - OPR then has an additional 30 calendar days to make decision
- ARB then has 45 calendar days to review upon receiving “complete and accurate information”
 - If ARB denies credit issuance, OPO can appeal within 10 days of decision and provide additional information
 - ARB then has additional 30 calendar days to make decision
 - Key difference b/t OPR and ARB is the “complete and accurate information” – if ARB asks the verification company or OPO for more information, it resets the 45 day clock

Important MMC Protocol Items - 1

- Project Listing requirements (Section 7.1)
 - OPO/APD must submit 36 items listed in 7.1.(b)
 - Items worth noting...
 - (13) Documentation showing the Offset Project Operator's legal authority to implement the offset project
 - Gas rights, coal lease, mine permit
 - (18) MSHA classification (C) active or abandoned (no intermittent)
 - Issue with “non producing” mines
 - (29) Describe any mine methane destruction occurring at the mine prior to the offset project commencement date
 - Non-qualifying devices
 - (34-36) Mine maps, lease boundaries, locations of shafts, wells, boreholes, location of equipment, etc.

Important MMC Protocol Items - 2

- Section 7.2 – OPDR
 - (7) and (8) Reporting Period and Start Date
 - All projects
 - Weighted average of methane for the RP, volume of mine gas sent to the destruction devices (qualifying and non-qualifying), site specific destruction efficiencies if used, quantities of electricity / heat / fossil fuels used to accomplish destruction of mine gas that are additional to the baseline
 - (13) VAM Projects
 - Hourly average flow rate of VAM and cooling air sent to destruction device, hours during which the destruction device was operational during the reporting period, volume of supplemental mine gas
 - (14) & (15) Active Underground and Surface Mines
 - Pre-mining surface wells mined through during the project
 - (16) Abandoned Mines
 - For multiple mines involved in an AMM Project, items marked with an asterisk in section 7.2b must be provided for each mine

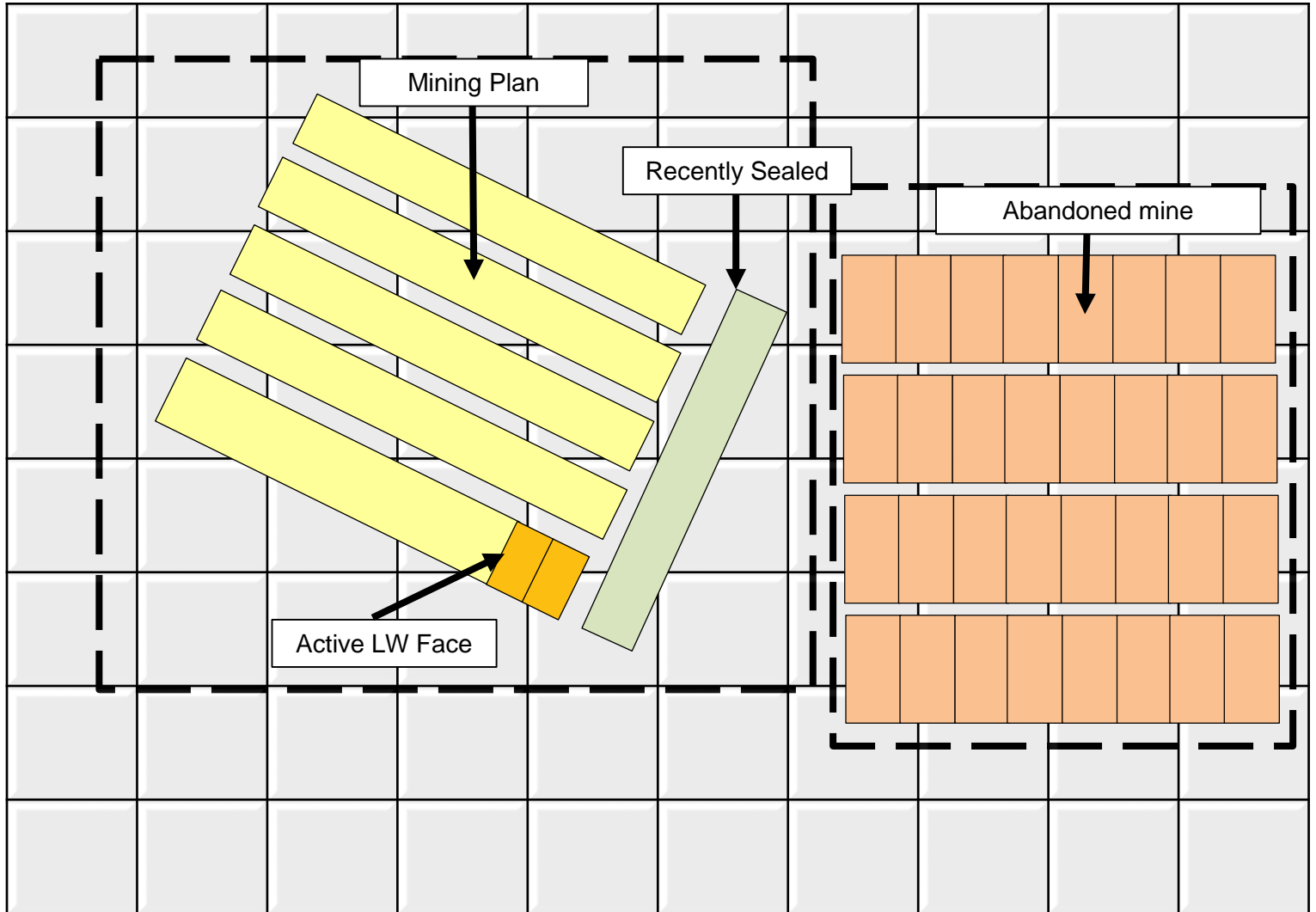
Important MMC Protocol Items - 3

- Regulatory Compliance
 - The project is out of regulatory compliance if the project activities were subject to enforcement action by a regulatory oversight body during the Reporting Period.
 - An offset project is not eligible to receive ARB or registry offset credits for GHG reductions or GHG removal enhancements for the entire Reporting Period if the offset project is not in compliance with regulatory requirements directly applicable to the offset project during the Reporting Period.
 - Compliance with Mine Safety & Health Administration
 - 80,000 citations issued at coal mines in 2012
 - Currently \$70 million dollars in delinquent penalties

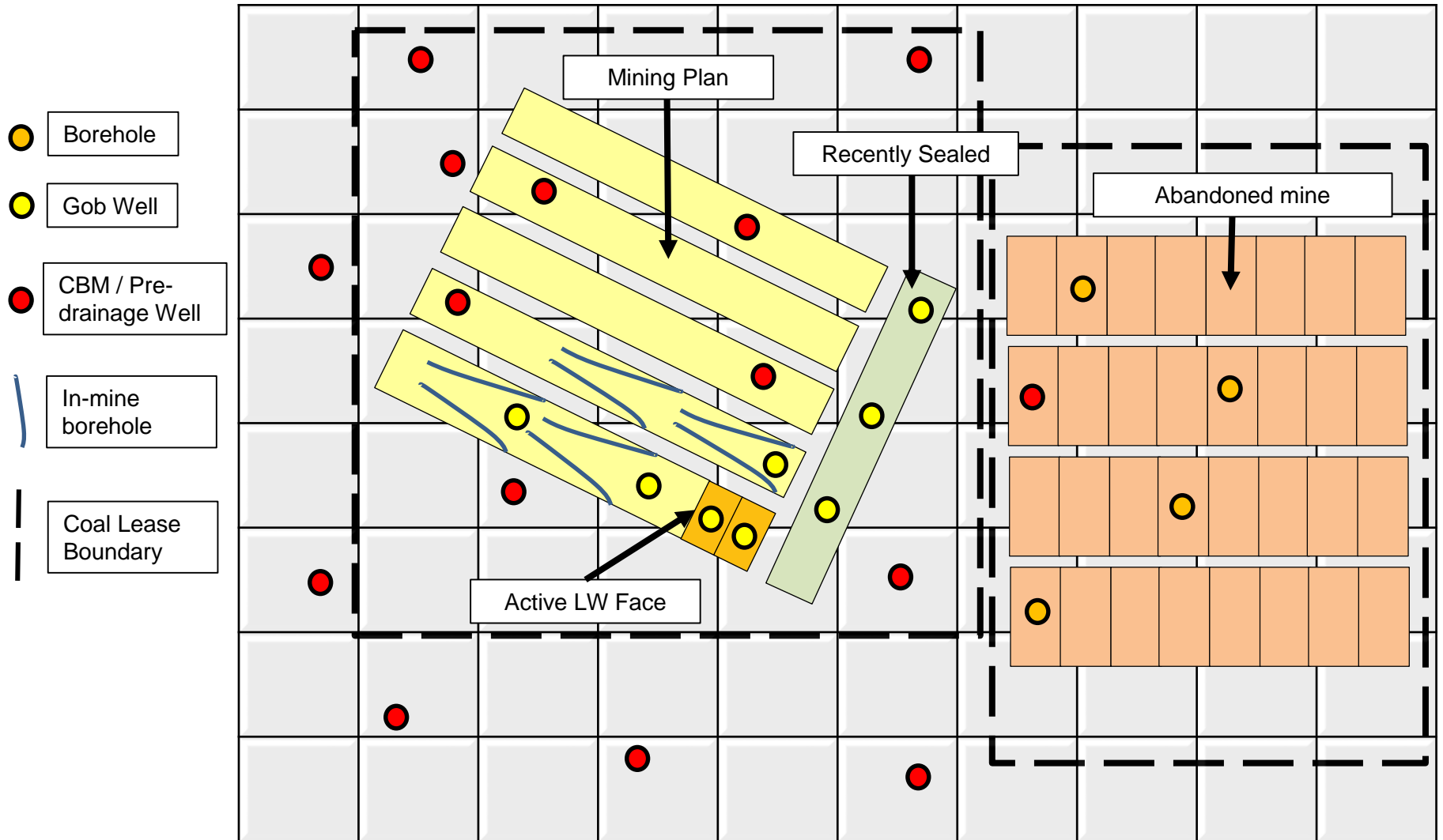
Important MMC Protocol Items - 4

- Monitoring Requirements (Section 6)
 - Similar to previous CAR and VCS Protocols
- Sec. 6.1
 - Operational activity monitored and documented hourly
 - Flow adjusted to Protocol standard temperature and pressures
 - Evidence of pre-mining well being mined through
- Sec. 6.2
 - All monitoring equipment inspected and cleaned quarterly with the “as found / as left” condition documented
 - Checked for calibration accuracy (before any corrective action is taken)
 - Calibrated according to manufacturer’s recommendations or every five years
 - Methane reference value for VAM methane analyzers must be 2%
- Sec. 6.3
 - Contains a list of documents that must be retained for the time required by the Regulation

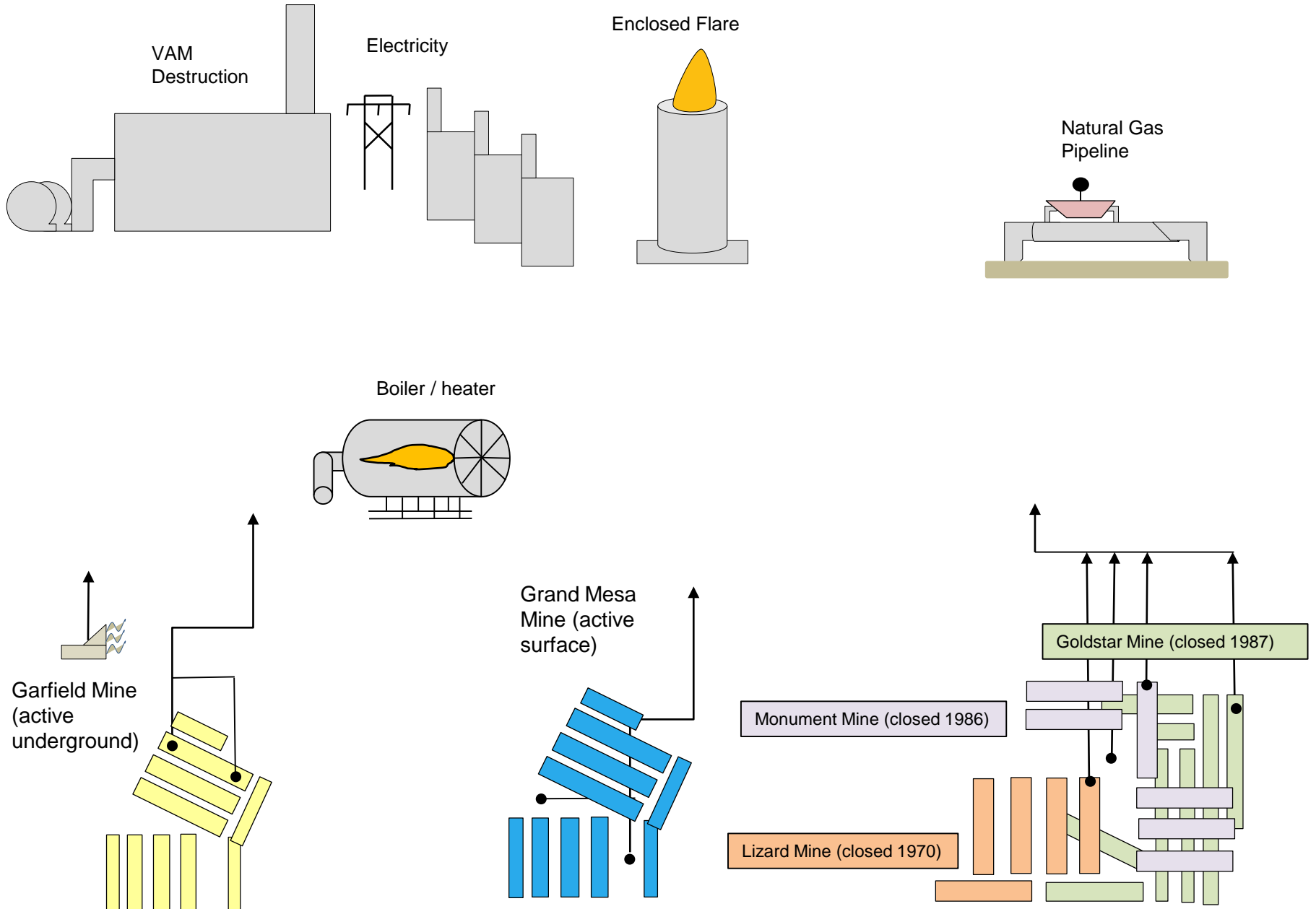
Eligible Methane Sources



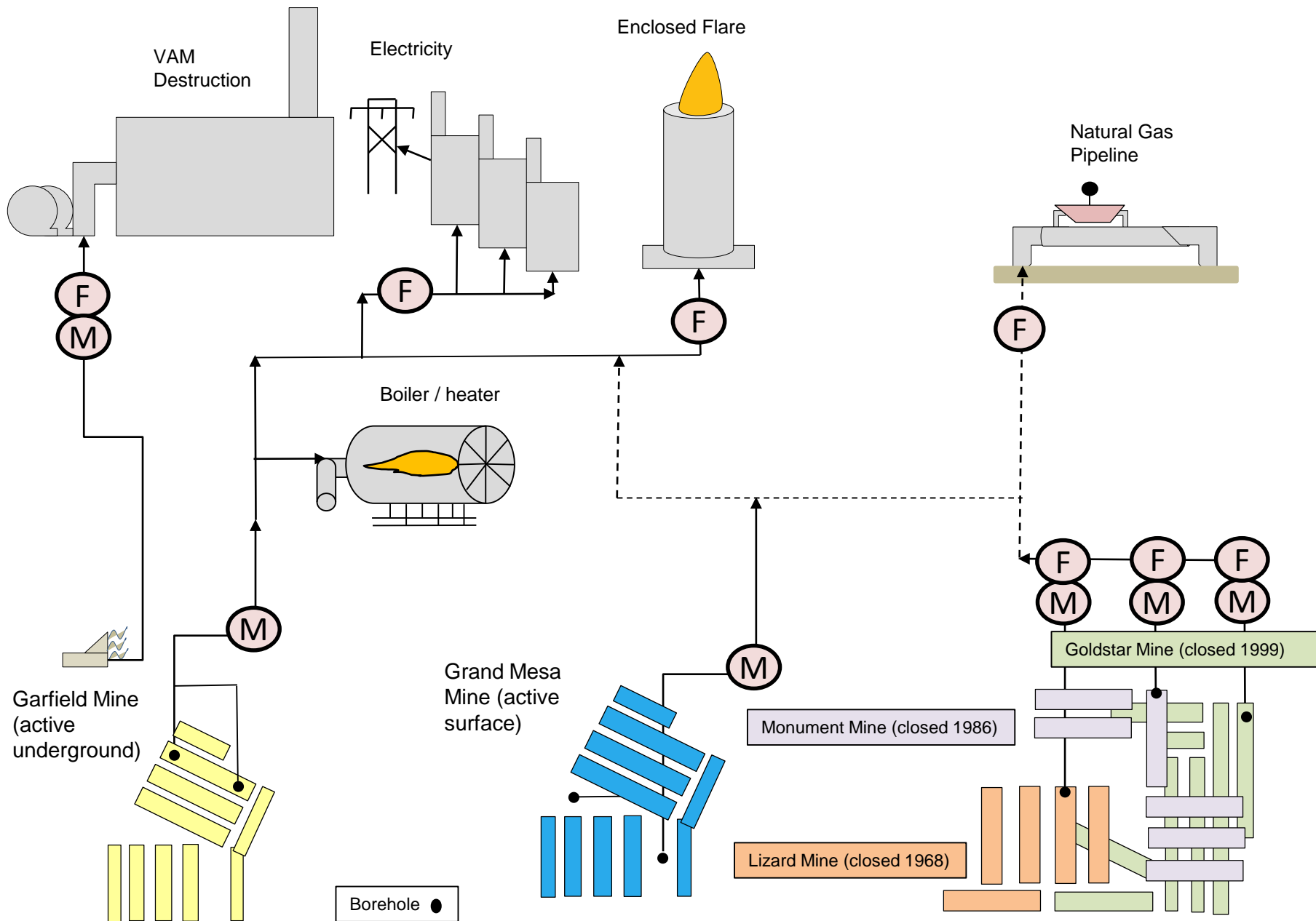
Eligible Methane Sources



Metering Flow and Methane Concentrations



Metering Flow and Methane Concentrations



Tips for Successful Verification

- Carefully read the Protocol and Regulation sections
 - Verifier will cite sections of the Protocol and Regulation
 - OPO will save time and money if these documents are understood prior to starting a project
- Gather all necessary documents and data prior to verification
 - The project must provide supporting documentation/data demonstrating how every section of the Protocol is met
 - Don't wait to provide a document until the verifier asks
 - Organization will significantly speed up the verification process
 - Alternatively, disorganized projects will be significantly delayed
- Work with the OPR on any questions or confusion
 - The verifier cannot assist the OPO on how to fix problems
 - OPRs are great resource to answer questions and come up with solutions to issues that arise during project implementation and verification
- Reduce invalidation risk from eight years to three years by:
 - Increasing verifier rotation from six years to three years
 - Conducting double verifications

Questions?

Contact Information

Tel: 970-241-9298

Email: Michael Cote – mcote@rubycanyoneng.com