

**US Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety**

**Gas IMP Field Verification Inspection
49 CFR Subparts 192.911, 192.921, 192.933, & 192.935**

General Notes:

1. This Field Verification Inspection is performed on field activities being performed by an Operator in support of their Integrity Management Program (IMP).
2. This is a two part inspection form:
 - i. A review of applicable Operations and Maintenance (O&M) and IMP processes and procedures applicable to the field activity being inspected to ensure the operator is implementing their O&M and IMP Manuals in a consistent manner.
 - ii. A Field Verification Inspection to determine that activities on the pipeline and facilities are being performed in accordance with written procedures or guidance.
3. Not all parts of this form may be applicable to a specific Field Verification Inspection, and only those applicable portions of this form need to be completed. The applicable portions are identified in the Table below by a check mark. Only those sections of the form marked immediately below need to be documented as either “Satisfactory”; “Unsatisfactory”; or Not Checked (“N/C”). Those sections not marked below may be left blank.

Operator Inspected: *Cascade Natural Gas Corporation*

Op ID: 2128

Perform Activity (denoted by mark)	Activity Number	Activity Description
No	1A	In-Line Inspection
No	1B	Hydrostatic Pressure Testing
X	1C	Direct Assessment Technologies
No	1D	Other Assessment Technologies
No	2A	Remedial Actions
No	2B	Remediation – Implementation
No	3A	Preventive & Mitigative – additional measures evaluated for HCAs
No	3B	Preventive & Mitigative – automatic shut-off valves
X	4A	Field Inspection for Verification of HCA Locations
X	4B	Field Inspection for Verification of Anomaly Digs
X	4C	Field Inspection to Verify adequacy of the Cathodic Protection System
X	4D	Field inspection for general system characteristics

Gas IMP Field Verification Inspection Form

Name of Operator: Cascade Natural Gas Corporation

Headquarters Address: 8113 W Grandridge Blvd, Kennewick, WA 99336

Company Official: Eric Martuscelli – VP Operations

Phone Number: 509.734.4585

Fax Number: 509.377.6097

Operator ID: 2128

Persons Interviewed	Title	Phone No.	E-Mail
Ryan Privratsky	Primary Contact	509.734.4599	Ryan.privratsky@cngc.com
Vicki Ganow	Pipeline Safety Specialist		Vicki.ganow@cngc.com
Patti Chartrey	Pipeline Safety Specialist	206.225.8510	Patti.chartrey@cngc.com
Tina Beach	Manager, Stds & Compliance	206.445.4121	Tina.beach@cngc.com
Kevin Raschkow	Manager, Engineering Svcs	509.734.4552	Kevin.raschkow@cngc.com

OPS/State Representative(s): Stephanie Zuehlke Date(s) of Inspection: November 7, 2011

Inspector Signature: Stephanie Zuehlke Date: 11.07.11

Pipeline Segment Descriptions: *[note: Description of the Pipeline Segment Inspected as part of this field verification. (If information is available, include the pipe size, wall thickness, grade, seam type, coating type, length, normal operating pressure, MAOP, %SMYS, HCA locations, class locations, and Pipeline Segment boundaries.)]*

PV 16" Fredonia Line #14 WT=.281"; Grade=X52 (install date: 1983) Seam type: ERW; Coating=extruded std mill coat; L=12.36 miles 65260.8 ft.); Normal operating psi=495psi; MAOP=500psi; %SMYS=27.37%; HCA locations = 2; (171416-01 (3,406ft.) ; -02 (re-evaluated and removed as HCA due to PIR); -03 (807ft). Class Locations=No comprehensive study available. Completed PIR method. 247ft. (Subpart O evaluation) using management of change form reduced from 300ft (rounded version) previously used

PV 16" March Point #16; WT=.281; Grade=X52 (install date: 1992) Seam type: ERW; Coating=extru coat w/std mill coat: L=8.22 mi (43401.6ft); Normal operating psi= XXX; MAOP 500psi; %SMYS=27.38%; HCA locations = 6 HCA's, 171616.01 – 6 (HCA -02 removed August 2011 evaluation). -01=501ft; -03=2514ft; -04=1508ft; -05=1049ft; -06=1177ft. Class Locations=No comprehensive study available. Completed PIR method. 247ft. (Subpart O evaluation) using management of change form reduced from 300ft (rounded version) previously used

PV 8" Anacortes Line #1; WT=.188" (1956) & .250 (2010); Grade=X42; Seam type=Unknown (but evaluation identifies ERW pipe for this vintage) See copy in file. L=21.33mi (112516.8ft.) Coating = Asphalt enamel Normal Operating psi=399psi; MAOP=400psi; %SMYS= low 13.27% up to worst case at (majority of line)is at 21.85%; HCA locations = 8; 170108-01-08 : -01=3406ft; -02=914';-03- 644'; -04=712ft;-05=2030'; =06=1344ft; -07=392; -08=706ft. Class Locations=No comprehensive study available. Completed PIR method. 247ft. (Subpart O evaluation) using management of change form reduced from 300ft (rounded version) previously used

PV 8" March Point Line #2; WT=.188 & .250; Grade=X42; Seam type= Seam type=Unknown (but evaluation identifies ERW pipe for this vintage) See copy in file. Coating=asphalt enamel. L=1.77 mi.(9345.6ft) Operating psi=<399psi; MAOP=400; %SMYS=21.85%; HCA locations = 1 ; 170208-01 900ft.; Class Locations=No comprehensive study available. Completed PIR method. 247ft. (Subpart O evaluation) using management of change form reduced from 300ft (rounded version) previously used

CNG has identified they have only found small coating issues.

Site Location of field activities: *[note: Describe the portion of the pipeline segment reviewed during the field verification, i.e. milepost/stations/valves/pipe-to-soil readings/river crossings/etc. In addition, a brief description and case number of the follow up items in any PHMSA compliance action or consent agreement that required field verification. Note: Complete pages 8 & 9 as appropriate.]*

Staff reviewed portions of all of above lines at various locations. This inspection is not a follow up inspection as result of PHMSA compliance action requiring field verification.

Summary:

Discussed Design pressures, MAOP, and reduction in design for MAOP of 50% - spoke with Ryan P. about this and asked that they look at their pipeline regarding documentation or lack thereof and reduce to the minimum YS of 24K as is appropriate (if no documentation or supporting evidence of pipe grade) Also mentioned that CNG should review pipelines for correct derating factors including the class 4 location multiplier since they have identified that their entire system is designed and operated as a class 4. CNG has failed to complete a full Class location study. CNG failed to provide some requested information and review all seam types for accuracy in plan. CNG has identified all of above seam types as Unknown but in their evaluation identify it as ERW pipe. The pipe analysis/verification of CNG's IM plan will be addressed in February 2012 during their full UTC IM inspection.

Findings:

Included in above summary and below after code notations.

Key Documents Reviewed:

Document Title	Document No.	Rev. No	Date
ECDA Record Form 545	Form 545	06.06	06.26-28.07
Direct Assessment Dig Report	Form 626	06.06	07.26.07
Pre-Assessment	Form 535	06.06	06.08.06
HCA Survey Data 170108-01 transferred/in conjunction with Form 545 above	None		

Part 1 - Performance of Integrity Assessments

1A. In-Line Inspection	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that Operator's O&M and IMP procedural requirements (e.g. launching/receiving tools) for performance of ILI were followed.				
Verify Operator's ILI procedural requirements were followed (e.g. operation of trap for launching and receiving of pig, operational control of flow), as appropriate.				
Verify ILI tool systems and calibration checks before run were performed to ensure tool was operating correctly prior to assessment being performed, as appropriate.				
Verify ILI complied with Operator's procedural requirements for performance of a successful assessment (e.g. speed of travel within limits, adequate transducer coverage), as appropriate.				
Document ILI Tool Vendor and Tool type (e.g. MFL, Deformation). Document other pertinent information about Vendor and Tool, as appropriate				
Verify that Operator's personnel have access to applicable procedures for preparing, running and monitoring the pipeline for ILI tools include performance requirements (e.g.: tool speeds, pipe cleanliness, operation of tool sensors, and ILI field calibration requirements), as appropriate.				
Other:				<i>[Note: Add location specific information, as appropriate.]</i>
1B. Hydrostatic Pressure Testing	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that hydrostatic pressure tests complied with Part 192 Subpart J requirements.				
Review documentation of Hydrostatic Pressure Test parameters and results. Verify test was performed without leakage and in compliance with Part 192 Subpart J requirements.				
Review test procedures and records and verify test acceptability and validity.				
Review determination of the cause of hydrostatic test failures, as appropriate.				
Document Hydrostatic Pressure Test Vendor and equipment used, as appropriate.				
Verify that the baseline assessment is conducted in a manner that minimizes environmental and safety risks (reference §192.919(e) and ADB-04-01)				
Other:				
1C. Direct Assessment Technologies	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that application of "Direct Assessment Technology" complied with Part 192.923	x			Reviewing 8" Anacortes Line #1-170108-01-08 : -01=3406ft; Primary is ECDA with review at critical angles. Lines are not piggable. Mears consultant is completing all assessment. UT is completed prior to welding to review for delam, etc. Reviewed Form 545 = ECDA record .Reviewed form 626 = Direct Assessment Dig Report. Reviewed HCA Survey Data 170108-01.
Review documentation of Operator's application of "Direct Assessment Technology", if available. Verify compliance with Part 192.923 and Operator's procedural requirements, as applicable. ECDA ; CIS; DCVG; ACVG; PCM 5Drop.				
Verify that appropriate tests and/or inspections are being performed and appropriate data is being collected, as appropriate.				
Other. Anomaly dug, coating issue defined as defect on <20% SMYS line to Reg Sta - 10 3" pipe. No anomaly on 8" transmission.				
1D. Other Assessment Technologies	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that application of "Other Assessment Technology" complied with Operator's requirements, that appropriate notifications had been submitted to PHMSA, and that appropriate data was collected.				
Review documentation of notification to PHMSA of Operator's application of "Other Assessment Technology", if available. Verify compliance with Operator's procedural requirements. If documentation of notification to PHMSA of Operator's application of "Other Assessment Technology" is available, verify performance of assessment within parameters originally submitted to PHMSA.				

Verify that appropriate tests are being performed and appropriate data is being collected, as appropriate.	
Other.	

Part 2 - Remediation of Anomalies

2A. Remedial Actions – Process	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that remedial actions complied with the Operator’s procedural requirements.				
Witness anomaly remediation and verify documentation of remediation (e.g. Exposed Pipe Reports, Maintenance Report, any Data Acquisition Forms). Verify compliance with Operator’s O&M Manual and Part 192 requirements.				
Verify that Operator’s procedures were followed in locating and exposing the anomaly (e.g. any required pressure reductions, line location, identifying approximate location of anomaly for excavation, excavation, coating removal).				
Verify that procedures were followed in measuring the anomaly, determining the severity of the anomaly, and determining remaining strength of the pipe. Review the class location factor and failure pressure ratio used by Operator in determining repair of anomaly.				Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: _____ mV Off Potential: _____ mV
Verify that Operator’s personnel have access to and knowledge of applicable procedures.				
Other:				[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]
2B. Remediation - Implementation	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that the operator has adequately implemented its remediation process and procedures to effectively remediate conditions identified through integrity assessments or information analysis.				
If documentation is available, verify that repairs were completed in accordance with the operator’s prioritized schedule and within the time frames allowed in §192.933(d).				
Review any documentation for this inspection site for an immediate repair condition (§192.933(d)(1)) where operating pressure was reduced or the pipeline was shutdown. Verify for an immediate repair condition that temporary operating pressure was determined in accordance with the requirements in §192.933(a) or, if not applicable, the operator should provide an engineering basis justifying the amount of pressure reduction.				
Verify that repairs were performed in accordance with §192.103, §192.111, §192.713, §192.717, §192.719, §192.933 and the Operator’s O&M Manual, as appropriate. If welding is performed, verify a qualified welding procedure and qualified welders are used to perform repairs. If composite repair methods are used, verify that a method approved by the Operator is used, procedures are followed, and qualified personnel perform the repair.				Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: _____ mV Off Potential: _____ mV
Review CP readings at anomaly dig site, if possible. (See Part 4 of this form – “Field Inspection to Verify adequacy of the Cathodic Protection System”, as appropriate.				
Other:				[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]

Part 3 - Preventive and Mitigative Actions

3A. P&M Measures for Third Party Damage	Satisfactory	Unsatisfactory	N/C	Notes:
Identify additional measures evaluated for the HCA section of the pipeline and facilities.				
Verify that P & M measures regarding threats due to third party damage are being implemented: [§192.915(c), §192.935(b)(1)(iv)]:				
Confirm the use of qualified personnel for marking, locating, and direct supervision of known excavation work, as appropriate.				
Confirm the use of qualified personnel for monitoring of excavations conducted on covered pipeline segments by pipeline personnel, as appropriate.				
Other:				<p>[Note: Add location specific information, as appropriate.]</p>
3B. Installed Automatic Shut-off Valves (Protocol H.07)	Satisfactory	Unsatisfactory	N/C	Notes:
Verify additional preventive and mitigative actions implemented by Operator.				
Document that additional measures evaluated by the operator cover alternatives such as, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs, as appropriate				
Verify that the operator has a process to decide if automatic shut-off valves or remote control valves represent an efficient means of adding protection to potentially affected high consequence areas. [§192.935(c)]				
Verify operation of installed remote control valve by reviewing operator inspection/remote control records for partially opening and closing the valve, as appropriate.				
Other:				<p>[Note: Add location specific information, as appropriate.]</p>

Part 4 - Field Investigations (Additional Activities as appropriate)

4A. Field Inspection for Verification of HCA Locations	Satisfactory	Unsatisfactory	N/C	Notes:
Review HCAs locations as identified by the Operator. Utilize NPMS and Operator maps, as appropriate.		x		
<p>Verify that the operator's integrity management program includes accurate and updated system maps or other suitably detailed means documenting the pipeline segment locations that are located in high consequence areas, as appropriate. [§192.905(a)] AOC for HCA maps to monitor updating of PIR and continuing surveillance docs received by engineering.</p>				
<p>Review the operator's applicable procedures and forms used to document new information from one-calls, surveys, aerial & ground patrols are being completed by field personnel to communicate new developments that may impact high consequence areas or that may create new high consequence areas to IM personnel, as appropriate. [§192.905(c)] <u>No re-evaluation for Mt Vernon was completed in 2010.</u> Reviewed Reevalutaion of Company HCAs (Rev 2005) Did review 2011 that states no changes – 2010 information for HCA evaluation did not reach engineering. Since no changes to HCA – okay and process has been corrected. Additional training will be provided to all districts to all involved in surveys/patrols, etc.</p>				<p>[Note: Add location specific information, as appropriate.]</p>
<p>Review the operator's applicable procedures and forms to confirm that new HCAs and class location changes are being identified through it's continuing surveillance program as required by §192.613 and §192.905. IM procedures 4.1.4. require docs from field to be provided to engineering. This did not happen in 2010 for Mt. Vernon but was completed in 2011 with nothing added. Procedure IMP 4.1.4 Reevaluation of HCAs.</p>				
4B. Field Inspection for Verification of Anomaly Digs	Satisfactory	Unsatisfactory	N/C	Notes:
Verify repair areas, ILI verification sites, etc.	x			
<p>Document the anomaly dig sites observed and reviewed as part of this field activity and the actions taken by the operator. Reviewed line as noted.</p>				<p>Review 8" Anacortes Line #1-170108-01-08 : -01=3406ft; Primary is ECDA with review at critical angles. Lines are not piggable. Mears consultant is completing all assessment. UT is completed prior to welding to review for delam, etc. Reviewed Form 545 = ECDA record .Reviewed form 626 = Direct Assessment Dig Report. Reviewed HCA Survey Data 170108-01.</p>
4C. Field Inspection to Verify adequacy of the Cathodic Protection System	Satisfactory	Unsatisfactory	N/C	Notes:
In case of hydrostatic pressure testing, Cathodic Protection (CP) systems must be evaluated for general adequacy.	x			
<p>The operator should review the CP system performance in conjunction with a hydrostatic pressure test to ensure the integrity assessment addressed applicable threats to the integrity of the pipeline. Has the operator reviewed the CP system performance in conjunction with the hydrostatic pressure test?</p>				
<p>Review records of CP readings from CIS and/or annual survey to ensure minimum code requirements are being met, if available.</p>				<p>Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: ____ -1.32 V Off Potential: ____ -1.08 V</p>
<p>Review results of random field CP readings performed during this activity to ensure minimum code requirements are being met, if possible. Perform random rectifier checks during this activity and ensure rectifiers are operating correctly, if possible.</p>				<p>[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]</p>

4D. Field inspection for general system characteristics	Satisfactory	Unsatisfactory	N/C	Notes: 16" Fredonia Line overgrown – sight distance issues w/BB overgrown.
Through field inspection determine overall condition of pipeline and associated facilities for a general estimation of the effectiveness of the operator's IMP implementation.		x		<p>No pipeline in casing has been assessed on the 8" transmission pipeline to date. CNG anticipates downgrade to this line to below 20% SMYS in February/March 2012, so will not be assessing. ECDA was not performed at every HCA location. Ryan will provide documentation of what was assessed/w/timeline in 2007 and same for 2012. Breakdown of HCA's and include docs on casing. Records documenting 2007 assessment considered in to 2012.</p>
Evaluate condition of the ROW of inspection site to ensure minimum code requirements are being met, as appropriate.				
Comment on Operator's apparent commitment to the integrity and safe operation of their system, as appropriate.				
Check ROW for pipeline markers in line-of-sight and Emergency call-in number on marker posts.				
Other: <u>CNG failed to provide the information requested (for review) in right-hand column.</u>				

Anomaly Evaluation Report (to be completed as appropriate)

Pipeline System and Line Pipe Information		
Operator (OpID and System Name): 2128/Cascade Natural Gas		
Unit ID (Pipeline Name) Mt. Vernon – Skagit, Island, and Snohomish Counties		
Pipe Manufacturer and Year: Detailed in segment descript.	Seam Type and Orientation:	
Pipe Nominal OD (inch):	Depth of Cover:	
Pipe Nominal Wall thickness (inch):	Coating Type and Condition:	
Grade of Pipe:	MAOP:	
ILI Reported Information		
ILI Technology (e.g., Vendor, Tools):		
Anomaly Type (e.g., Mechanical, Metal Loss):		
Is anomaly in a segment that can affect an HCA? (Yes / No)		
Date of Tool Run (MM/DD/YY):	Date of Inspection Report (MM/DD/YY):	
Date of “Discovery of Anomaly” (MM/DD/YY):		
Type of “Condition” (e.g.; Immediate; 60-day; 180-day):		
Anomaly Feature (Int/Ext):	Orientation (O’clock position):	
Anomaly Details: Length (in):	Width (in):	Depth (in):
Anomaly Log Distance (ft):	Distance from Upstream weld (ft):	
Length of joint(s) of pipe in which anomaly is identified (ft):		
Anomaly Dig Site Information Summary		
Date of Anomaly Dig (MM/DD/YY):		
Location Information (describe or attach map):		
Mile Post Number:	Distance from A/G Reference (ft):	
Distance from Upstream weld (ft):		
GPS Readings (if available) Longitude:	Latitude:	
Anomaly Feature (Int/Ext):	Orientation:	
Length of joint of pipe in which anomaly is found (ft):		
For Mechanical Damage Anomaly		
Damage Type (e.g., original construction, plain dent, gouge):		
Length (in):	Width (in):	Depth (in):
Near a weld? (Yes / No):		
Gouge or metal loss associated with dent? (Yes / No):	Are multiple dents present? (Yes / No):	
Did operator perform additional NDE to evaluate presence of cracks in dent? (Yes / No):		
Cracks associated with dent? (Yes / No):		
For Corrosion Metal Loss Anomaly		
Anomaly Type (e.g., pitting, general):		
Length (in):	Width (in):	Max. Depth (in):
Remaining minimum wall thickness (in):	Maximum % Wall Loss measurement(%):	
Safe pressure calculation (psi), as appropriate:		
For “Other Types” of Anomalies		
Describe anomaly (e.g., dent with metal loss, crack, seam defect, SCC):		
Length (in):	Width (in):	Max. Depth (in):
Other Information, as appropriate:		
Did operator perform additional NDE to evaluate presence of cracks? (Yes / No):		
Cracks present? (Yes / No):		

Anomaly Repair Report *(to be completed as appropriate)*

Repair Information		
Was a repair of the anomaly made? (Yes / No):		
Was Operating Pressure Reduced per 192.933(a) requirements?		
Was defect ground out to eliminate need for repair? (Yes / No):		
If grinding used, complete the following for affected area:		
Length (in):	Width (in):	Depth (in):
If NO repair of an anomaly for which RSTRENG/B31.G is applicable, were the Operator's RSTRENG/B31.G calculations reviewed? (Yes / No):		
If Repair made, complete the following:		
Repair Type (e.g., Type B-sleeve, composite wrap)		
Was defect ground out prior to making repair? (Yes / No):		
Operating Pressure at the time of repair:		
Length of Repair:	Pipe re-coating material used:	
Comments on Repair material, as appropriate (e.g., grade of steel, wall thickness):		
Comments on Repair procedure, as appropriate (e.g., welded sleeve, composite wrap):		
General Observations and Comments		
Was a diagram (e.g., corrosion map) of the anomaly made? (Yes / No):		(Include in report if available)
Were pipe-to-soil cathodic protection readings taken? (Yes / No):		
If CP readings taken, Record: On Potential: _____ mV; Off Potential: _____ mV		
<i>[Note: Note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]</i>		
Describe method used by Operator to locate anomaly (as appropriate):		
Comments regarding procedures followed during excavation, repair of anomaly, and backfill (as appropriate):		
General Observations and Comments <i>(Note: attach photographs, sketches, etc., as appropriate):</i>		
Staff observation information has been included directly in above form as notes. Staff has also included comments in above form after pertinent code section questions.		